UGUST 10, 1953 Forecasting Freight Traffic . . . p. 81

# RAILWAY AGE

The Standard Railroad WEEKLY for Almost a Century

PRINT IN BINDING

AUG 11 1953

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*What Weight of Rail?* .....p. 90

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*Railroad Buying Continues Steady* .....p. 93

—SAVE CRITICAL MATERIALS..

WEIGHT..

LABOR!

YOU, TOO, CAN EQUIP YOUR DROP BOTTOM GONDOLAS WITH...

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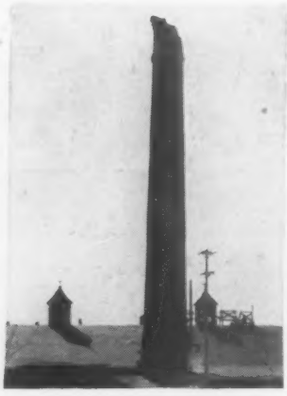


# Crash of Old Smokestack Makes Way for Progress on the M. & St. L.

*Minneapolis Star Photos*

Tearing down a Smokestack—or any other structure—may seem like Progress in Reverse. But not on **The Minneapolis & St. Louis Railway**

At the Cedar Lake Shops of the M. & St. L. in Minneapolis, a big Chimney, 100 feet tall, has just been razed, along with an ancient Power House that had burned coal for three-quarters of a century. This was a wrecking job to *Make Way for Progress.*

The crash and dust-cloud of the Falling Stack marked another step in the M. & St. L. program for Complete Modernization of Shops and Yards, of Facilities and Equipment, all over the M. & St. L. System in four Midwest States.

New yard tracks are being laid where the old power house stood. A new plant, 1953 style, heats Cedar Lake Buildings. The M. & St. L. now buys power for its hundreds of shop machines from an electric company.

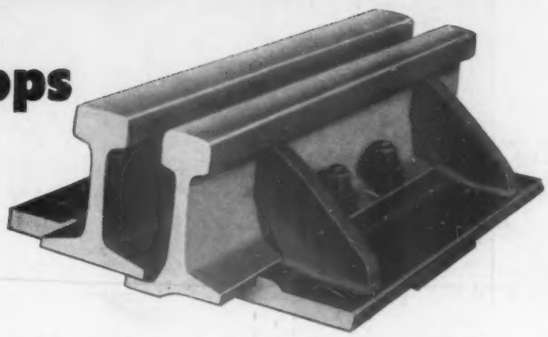
All this means more Efficiency and Economy—two things that are the Order of the Day on the Dieselized M. & St. L. When new construction is finished, the M. & St. L. at Cedar Lake will have one of America's Finest Railroad Shops. And that will mean Further Improvement in ***M. & St. L. Fast Freight Service***

*The* **MINNEAPOLIS & ST. LOUIS** *Railway*

Modern & STream Lined

THE MINNEAPOLIS & ST. LOUIS RAILWAY CO. — THE PEORIA GATEWAY

# Built to Absorb the Wallops



Section of braced-type Hook-Flange Guard Rail (Model 751). This type is especially good where complete rigidity is specified.

Bethlehem's Hook-Flange Guard Rail can't be budged by side thrust—even the sudden, lurching kind that carries a punch. The reason, aside from strength, is its unique design, which has proved itself in thousands of installations.

Essentially, the Hook-Flange Guard Rail consists of a specially-shaped rolled-steel rail bolted to special tie-plates. One flange of the guard rail fits snugly against a shoulder on each tie-plate, so that lateral movement is prevented. The other flange dips under, and is held down by, the running rail; hence the weight of the train prevents the guard rail from overturning, no matter how sharp the wheel thrust.

The installation pictured above shows the Model 750. This model is often the choice where a somewhat resilient guarding device is preferred. However, certain railroads insist upon a completely rigid guard rail, and for this type of installation we offer the 751. In most respects it is similar to the 750, but is heavily braced in the area opposite the frog point.

Use the Bethlehem Hook-Flange Guard Rail wherever you have high-speed, main-line traffic or heavy yard service. It is available for all weights and types of rail, in any length required.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

*On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation*

BETHLEHEM STEEL

## HOOK-FLANGE GUARD RAIL

# Concentrate Control at Division Headquarters with "UNION" C.T.C.

● There's no need to scatter your control points all over the map when you install "Union" C. T. C. You can pick the one best control point—usually division headquarters itself —and direct train movements by signal indication on a subdivision or complete division over a simple two-wire line.

You can run your passenger trains with minimum interference to freights. You can cut delays, reduce congestion and maintain fast schedules *without* excessive speeds.

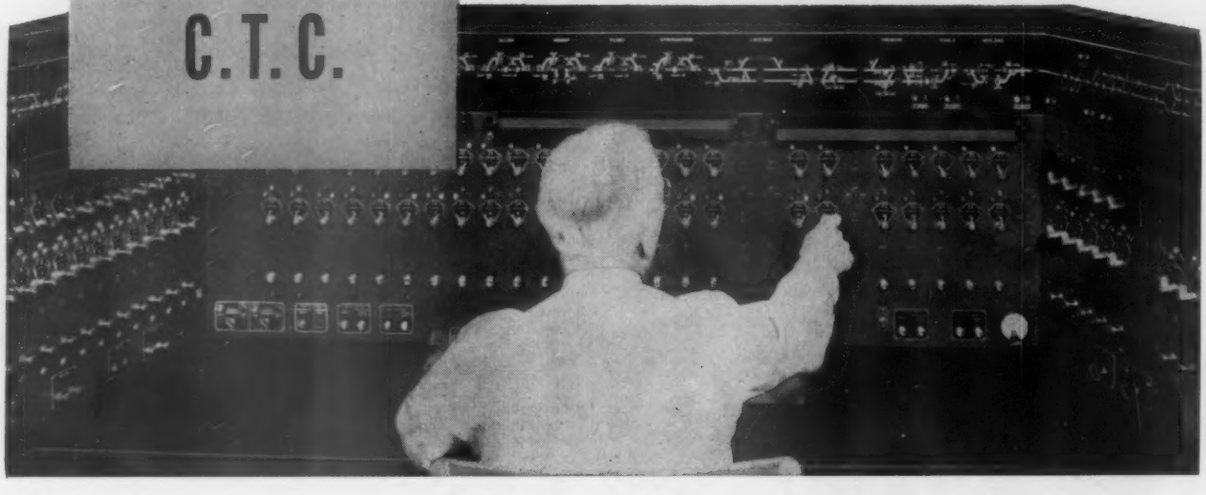
Get in touch with our nearest district office for more information.

**UNION SWITCH & SIGNAL**

**DIVISION OF WESTINGHOUSE AIR BRAKE COMPANY**

SWISSVALE PENNSYLVANIA

NEW YORK CHICAGO ST. LOUIS SAN FRANCISCO



# RAILWAY AGE

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**August 10, 1953** **Vol. 135, No. 6**


# Week at a Glance


**Improvement of L.c.l. Freight Service** will be the subject of "continuous study and research" by a new unit to be set up within the Freight Station Section of the Association of American Railroads. 11

**Newest Member of the I.C.C.,** whose appointment was confirmed by the Senate just prior to adjournment, is Kenneth H. Tuggle, former lieutenant governor of Kentucky. 13

**New Vice-President** in charge of the A.A.R.'s Operations and Maintenance Department will be Richard G. May, assistant vice-president—operations and maintenance of the New York Central, who will succeed James H. Aydelott September 1. 17

*RAILWAY AGE* FORUM

**There Is No Reason to Be Gloomy** about railroad prospects—if the views of the "militant and ascendant people in the railroad business" lead to "an aggressive campaign . . . to win and retain all the freight traffic to which the railroads have a sound economic claim." 79

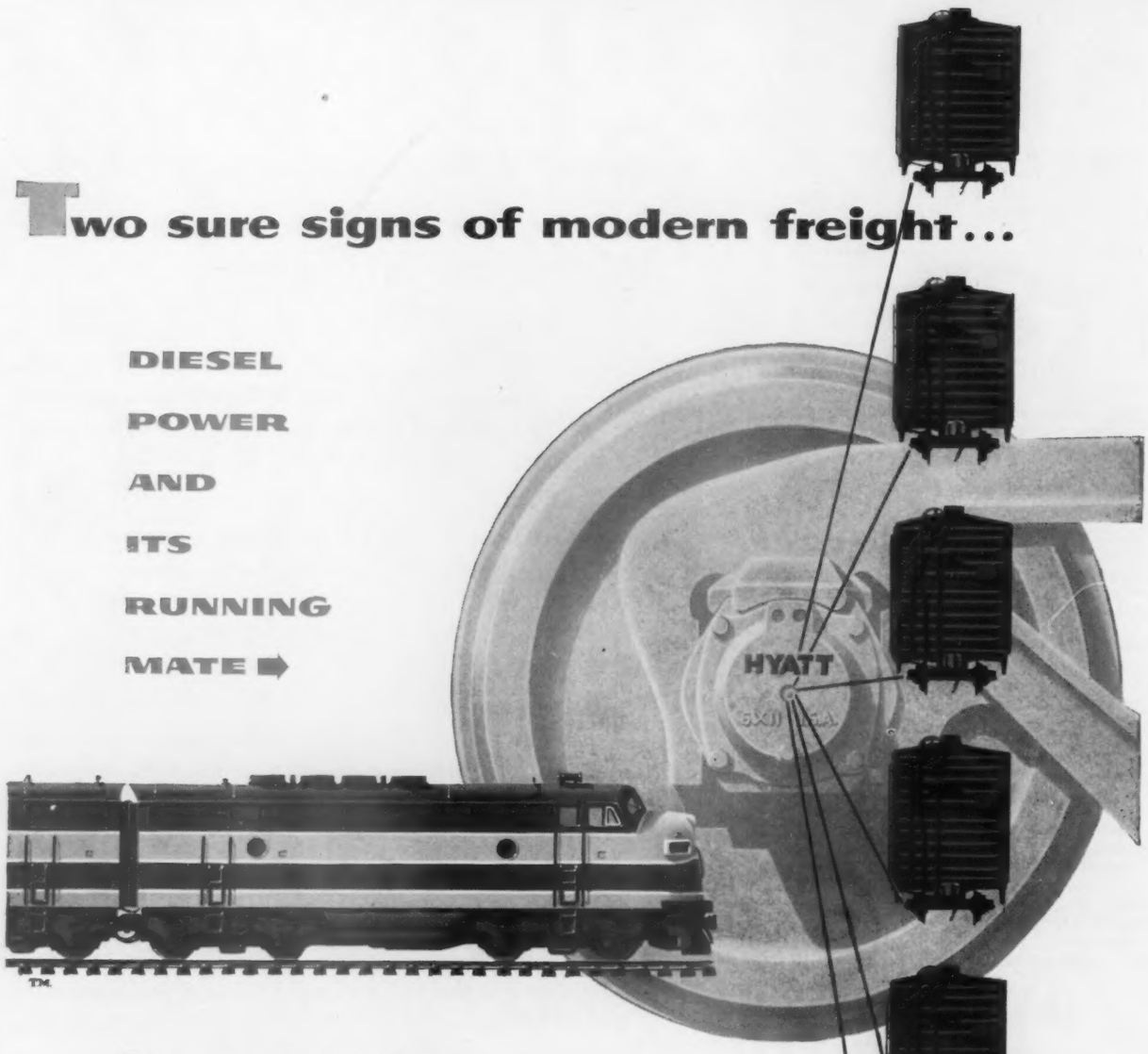
**Are the Brotherhoods Serious** in their outspoken interest in promoting movement of highway trailers on flat cars? And, if they are, will they give effect to their good intentions by doing all they can to help railroads provide the service and rates which will be attractive to "piggy back" business? 80

**Forecasting Freight Traffic** in terms of revenues has been reduced to a fine science on the Erie. E. S. Root, chief of research, tells how it is done. 81

**Both Railroad and Shippers Benefit** from the close coordination which radio has helped the Burlington achieve in operation of its five Omaha-Council Bluffs yards. 84

# Two sure signs of modern freight...

**DIESEL POWER AND ITS RUNNING MATE ➡**




First came the diesels. And now there's another sure sign of modern freight—at the journals of the newest freight cars. *It's the Hyatt name on journal box lids—meaning that a car is equipped with Hyatt Roller Bearings!* Standard equipment for years on thousands of passenger train cars and nearly 70% of all diesel road locomotives, Hyatt Roller Bearing Journal Boxes now make possible streamliner speeds for freight. Hyatt-equipped cars will start easier and roll more smoothly, with less jolting of merchandise. And they will keep pace with the fastest diesels —without the problem of hot box delays (caused by overheating of old-fashioned, friction type bearings). Watch for modern freight—powered by diesels and rolling on Hyatts!

# HYATT

**ROLLER BEARING JOURNAL BOXES**

HYATT BEARINGS DIVISION • GENERAL MOTORS CORP. • HARRISON, N. J.

## Current Statistics

| | |
|---|---|
| Operating revenues, five months | |
| 1953 | $ 4,402,826,098 |
| 1952 | 4,306,097,045 |
| Operating expenses, five months | |
| 1953 | $ 3,333,902,343 |
| 1952 | 3,354,709,662 |
| Taxes, five months | |
| 1953 | $ 528,215,942 |
| 1952 | 506,471,365 |
| Net railway operating income, five months | |
| 1953 | $ 448,770,942 |
| 1952 | 374,463,064 |
| Net income, estimated, five months | |
| 1953 | $ 338,000,000 |
| 1952 | 260,000,000 |
| Average price railroad stocks | |
| August 4, 1953 | 64.64 |
| August 5, 1952 | 64.20 |
| Car loadings revenue freight | |
| Thirty weeks, 1953 | 21,892,431 |
| Thirty weeks, 1952 | 20,771,993 |
| Average daily freight car surplus | |
| August 1, 1953 | 26,506 |
| August 2, 1952 | 24,357 |
| Average daily freight car shortage | |
| August 1, 1953 | 2,186 |
| August 2, 1952 | 2,311 |
| Freight cars delivered | |
| June 1953 | 6,463 |
| June 1952 | 6,411 |
| Freight cars on order | |
| July 1, 1953 | 52,315 |
| July 1, 1952 | 99,615 |
| Freight cars held for repairs | |
| July 1, 1953 | 95,768 |
| July 1, 1952 | 105,255 |
| Average number of railroad employees | |
| Mid-June, 1953 | 1,228,201 |
| Mid-June, 1952 | 1,225,134 |

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## Week at a Glance CONTINUED

**Corrosion Resistance** of chrome-manganese and 18-8 steels has been the subject of exhaustive study, with some interesting results. **87**

**Proper Weight of Rail** for new or rehabilitated lines depends on axle loadings to be carried, physical characteristics of the particular line. and type and speed of traffic to be handled over it. **90**

**Railroad Buying in the First Five Months** of 1953 was closely comparable to that for the same period of 1952, with small gains in most categories offsetting a substantial decline in fuel purchases. **93**

**Ordinary Golf Tees**—plus pallets and numbered pallet spaces on a freighthouse floor—have helped the Frisco to speed up delivery of inbound city freight at St. Louis. **96**

**Dependable Rail Service at Its Best** is exemplified by the Santa Fe's "Operation Spuds," in which the railroad, within the space of a few weeks, moves some 20,000 refrigerated carloads of potatoes from California east. **101**

### BRIEFS

**A 50 Per Cent Fare Increase,** from 10 to 15 cents, on New York City's publicly owned transit facilities, went into effect July 25. The increase was ordered by the city's new transit authority, which is charged with making transit revenues equal costs, compared with the previous politically inspired system of keeping fares low to garner votes, and making up the resulting deficit out of general taxes. One member of the five-man authority, incidentally, is Henry K. Norton, president of the New York, Susquehanna & Western.

**That 19-Day Strike on the Rutland** may have more serious implications than the brothers anticipated when

## Week at a Glance CONTINUED

they called it to force an immediate wage increase. Passenger service has not yet been resumed; approximately one-third of the road's employees have been furloughed; the company has appealed to businessmen along its line "to turn up new traffic," and New York's Governor Dewey considers the situation serious enough to have offered the "fullest cooperation" of state agencies to avert "financial collapse" of the recently reorganized railroad.

**Per Diem Increased** to $2.40 on August 1. Balloting results announced by the A.A.R. board revealed owners of 1,521,342 cars voted for the increase, while owners of 423,333 cars opposed it. Meanwhile, the board has authorized institution by the association of proceedings looking to prescription of the per diem rates by the I.C.C.—if the association's Law Committee, after study, deems such action desirable.

**"To Create Greater Public Understanding** of railroad services and problems in northeastern states," the Eastern Railroad Presidents Conference has appointed Donahue & Coe, Inc., of New York, as its advertising representative. The agency will carry on an institutional advertising campaign in keeping with that objective.

**"Piggy-Backs" Are Gaining Momentum!** General Motors is going ahead with tests of its experimental car (*Railway Age*, June 22, page 11) and tie-down equipment. But—current newspaper reports notwithstanding—no specific production schedule has been established for manufacture of the new type of car. G.M. is also tackling the problem of proper terminal design, and the Rail-Trailer Company is working closely with them in developing certain overall phases of this rail-highway coordination idea. Meanwhile, Pullman-Standard is proceeding with plans to test its "piggy-back" tie-down equipment (*Railway Age*, June 1, page 19) on a conventional flat car, and at least four manufacturers of fork-lift trucks are racing to perfect special vehicles for side-loading highway trailers on the new-design flat cars.

**Donald Gordon,** chairman of the board and president of the Canadian National, has reportedly turned down an offer to serve as chairman of the British Transport Commission in England. Canada's Transport Minister Lionel Chevrier said he was "highly pleased" by Mr. Gordon's intention to remain at his present post. Mr. Gordon's decision, he said, was based "on the grounds that his existing duties and responsibilities were such that they preclude his leaving Canada or considering any other undertaking in the foreseeable future."

**Passenger Deficits** also plague motor carriers. Reports from 166 Class I carriers of passengers (intercity) revealed a deficit of $228,950 in the first quarter of 1953. This was up from $91,334 in the same period last year.

**The Pennsylvania** wants to abandon its Lake Michigan car ferry operations between Muskegon, Mich., and Milwaukee, Wis. Reason: High costs, low revenues. An application for authority to abandon has been filed with the I.C.C.

**Airport Headache for Chicago** — Development of the 6,000-acre O'Hare International field northwest of the city as *the* Chicago port finds little interest among commercial airline operators. The reason: They can land at the crowded Midway airport for only 4 cents per 1,000 gross plane-pounds. And contracts covering these charges can't be changed until 1969. (Most airports charge 12 cents; some as high as 20.)

. . . for maintenance and construction

# JACKSON MULTIPLE TAMPERS

. . . long ago established a standard of uniformity and excellence of tie tamping which remains unmatched today.

Moreover, in any ballast, and in any lift from that which is slightly lower than the maximum size of the ballast used to the very highest, Jackson Multiple Tie Tampers will put up perfect track at less cost than can be achieved by any other means.

These are facts which you can verify on your own line. We will be glad to place a Jackson Multiple with you on a rental basis, with rental to apply on optional purchase.

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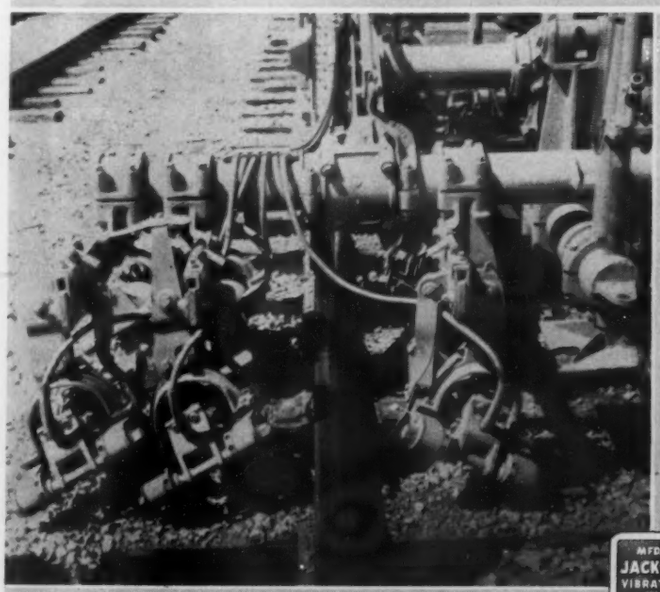
BOOTH Nos. 123—126
142—144



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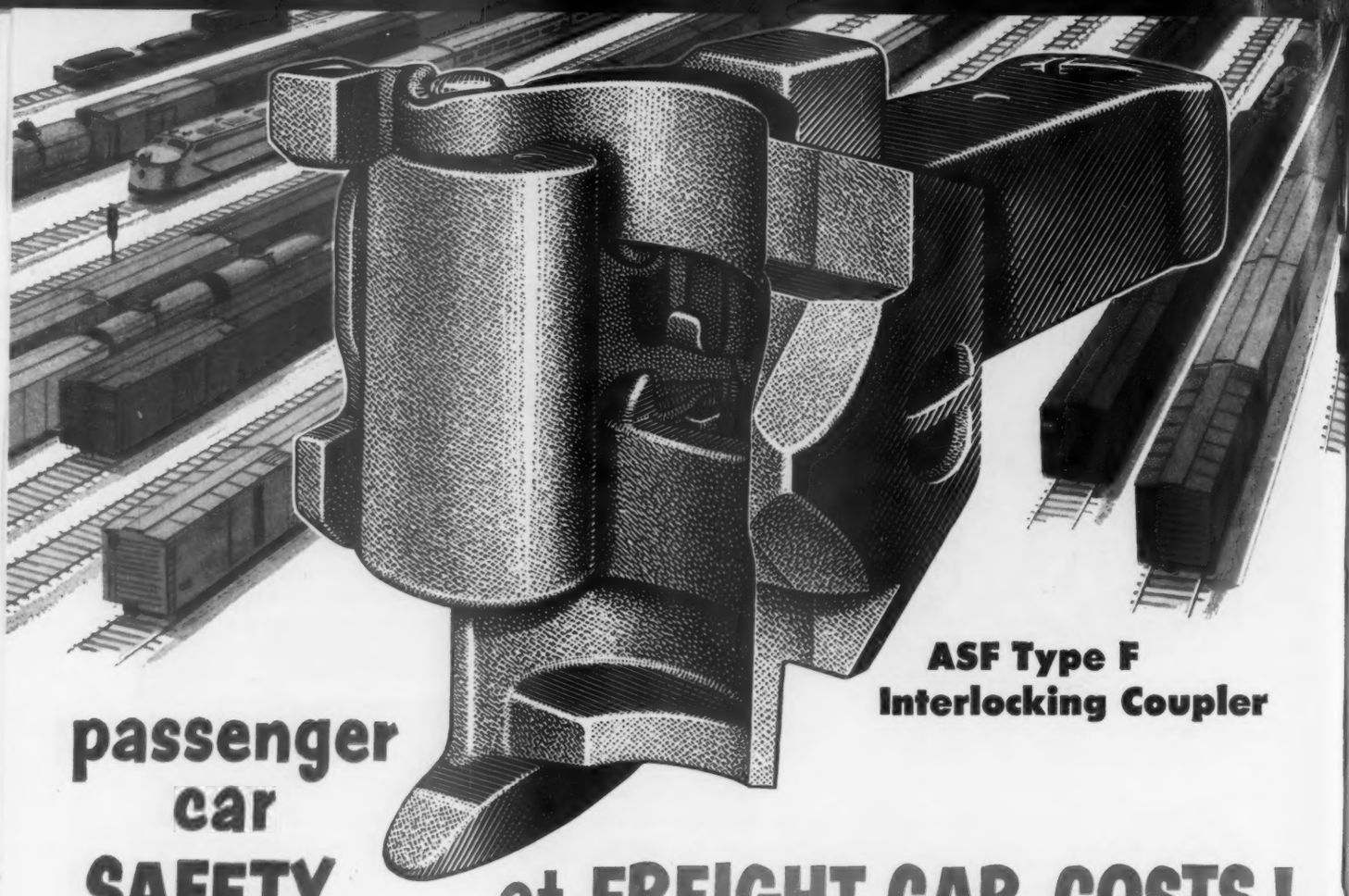
CANADIAN REPRESENTATIVES: MUMFORD, MEDLAND, LIMITED—WINNIPEG, MAN.



**ASF Type F Interlocking Coupler**

# passenger car SAFETY.....at FREIGHT CAR COSTS!

Tests of Type F Interlocking Freight Car Couplers, and experience gained from years of service with the interlocking coupler principle in passenger service, prove conclusively that they will go a long way toward eliminating accidental freight train partings, even in cases of derailment. And, a realistic appraisal of coupler *operating costs*, rather than first cost, shows that the Type F Coupler will provide this higher safety and *still be consistent with freight car economics.*

For example, reducing accidental freight train partings means fewer lost man-hours . . . fewer schedule delays. Reducing the chance of telescoping and overturning of cars in cases of derailment means much less damage to equipment . . . less danger to personnel. In fact, the Type F Coupler will *eliminate* the cause of many derailments! The safety support prevents a pulled-out coupler from dropping to the track.

And, the Type F Coupler means *lower maintenance costs.* Eliminating practically all vertical movement between mated F couplers—plus over 50% reduction in free contour slack—means less wear and shock stress, longer knuckle and contour life.

Continuous improvement is the goal for all railroads. The Type F Coupler is another real contribution to railroad progress for freight service. In ordering new cars, *the time to specify it is now!*

**Ask your nearest ASF Representative** for more information on Type F Couplers, or write today for illustrated folder C2 which gives complete details on construction and operation.

ASF

## American Steel Foundries

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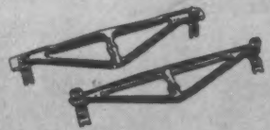
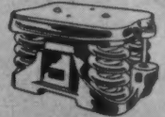
Canadian Sales: International Equipment Co., Ltd., Montreal, Quebec

*Look for this MINT ⬡ MARK on the running gear you specify*



Cast Steel Brake Beams

Ride-Control Trucks



Ride-Control Packages

Simplex Snubbers

Tightlock Couplers

Type F Couplers

Type E Couplers

# New Unit Will Study L.C.L.

**A.A.R. board votes to set up new group to consider ways for improving l.c.l. service**

The board of directors of the Association of American Railroads has decided to establish a new unit "to carry on continuous study and research for improvement of less-than-carload freight service."

The new unit will be set up within the A.A.R.'s Freight Station Section. The decision to carry on this new activity was made after a special committee of railroad men recommended such action be taken.

This "special committee" was appointed as the result of a suggestion made by the National Association of Shippers Advisory Boards.

At a meeting which was held in St. Louis last October, chairmen of l.c.l. committees for the advisory boards urged that such a committee be designated.

A report issued at that time urged the railroad group to study the advisability of adopting a single agency for all l.c.l. freight "within the operating framework and utilizing the existing pooling rights of the Railway Express Agency, or adopting one or a combination of various other proposals which have been before the boards in an endeavor to solve the serious l.c.l. problem" (*Railway Age*, October 20, 1952, page 53, and July 27, 1953 page 8).

## Container Lab Graduates New Class

Thirty-one loss and damage prevention men from railroads and from the Western Weighing & Inspection Bureau were "graduated" July 31 from the third seminar at the Association of American Railroads' Container Research and Development Laboratory, Chicago. Classes and demonstrations were conducted by Director A. P. Kivlin under auspices of the A.A.R. Freight Loss and Damage Prevention Section and the Freight Loading and Container Bureau. The curriculum covered container design, selection of container materials, and methods of stowing, blocking, bracing and strapping various commodities.

Morning lectures accompanied by slide films and exhibits were followed by practical demonstrations in the afternoon. These included compression tests and a tumbling drum test to determine strength of wooden crates and fiberboard boxes, tension tests of nail holding power, and application of steel strapping to different containers.

The students divided into small teams one afternoon to stow fiberboard boxes in bonded block loads, each team loading a different pattern. On the test track outside the laboratory, they learned four different methods of determining speed of a moving car, and then studied effects of impacts at varying speeds upon a rigid braced load and a snubbed load. Impact registers mounted on each load and on the center of the flat car revealed that the snubbed load received a much smaller impact because the lag screw arrangement permitted a restricted slide, absorbing most of the shock. Impacts at higher speeds showed damage in geometric progression.

The railroad men attending will return home to train their own subordinates.

**FLAT CAR (left) loaded with water-filled barrels to simulate units of skidded heavy machinery is set in motion by 1,000-hp. diesel on test track back of laboratory to demonstrate effects of coupling at varying speeds on both a rigid braced load and a snubbed load.**

**AFTER TENSIONING steel strap tightly around a wooden box (left, below) Demonstrator Vasiliou shows students proper method of reinforcement by metal bands.**

**R. W. PENNEY (below) slits and folds fiberboard, preparatory to forming a carton, while railroad men watch the process.**

## In Congress

# No New Transport Legislation

**Proposals were left pending at various stages short of final enactment when Congress adjourned on August 3**

No new transport legislation was enacted during the first session of the eighty-third Congress which adjourned "sine die" on August 3. Since it will be the same Congress which returns for the next session, all matters pending at various stages short of final enactment remain alive.

Pending matters of major interest to the railroads are topped by the so-called "time-lag" bill, S.1461, which they are sponsoring in order to insure prompt increases in their rates as costs rise, and the St. Lawrence seaway bill which they oppose.

At the time of adjournment, both measures were on the Senate calendar. The time-lag bill had been reported favorably from the Senate Committee on Interstate and Foreign Commerce while the St. Lawrence bill had won a like endorsement from the Senate Committee on Foreign Relations.

The "radio-rules" bill, S.539, which the railroads opposed vigorously before it was trimmed down to a "radio" bill by the Senate's interstate commerce committee, was passed by the Senate and left pending before the House Committee on Interstate and Foreign Commerce. As originally introduced, this bill would have amended the Interstate Commerce Act's section 25 (which now contains provisions of the so-called signal inspection act) to give the I.C.C. authority to require installations of radio and other train communication systems, and to prescribe operating rules in connection therewith and in connection with present signaling facilities. The Senate-approved version makes no reference to rules; it would simply extend the scope of the signal act to include "radio and other electronic devices."

The "trip-leasing" bill, H.R.3203, which would end the I.C.C.'s power to prohibit trip-leasing of motor trucks, was passed by the House and left pending before a subcommittee on the Senate committee on interstate commerce. Meanwhile, however, proponents of this legislation got from the Senate Committee on Agriculture and Forestry a resolution requesting the I.C.C. to postpone the effective date of the trip-leasing ban.

The effective date is now September 1, and the resolution's request was that it be postponed "until Congress shall have completed action on H.R.3203." When this issue went to press, the commission had taken no action in response to the resolution.

### Retirement Act Bill

Also passed by the House, and left pending before the Senate Committee on Labor and Public Welfare, was H.R.356, which would repeal the so-called dual-benefit provisions of the Railroad Retirement Act. Under those provisions, which were added in 1951, the railroad retirement annuity or pension of an individual must be reduced if such individual has creditable railroad service before 1937 and is receiving, or is entitled to receive on application, an old-age benefit under the Social Security Act. This bill is opposed by the railroads.

Meanwhile, Congress did enact two laws which make Presidential powers embodied in sections 1(15) and 6(8) of the Interstate Commerce Act applicable for the duration of the national emergency proclaimed December 16, 1950, and six months thereafter. The powers, previously available only in "time of war or threatened war," give the President authority to require that priority be given to the transportation of war freight, troops and materiel.

Also passed were the usual appropriation bills providing funds for the I.C.C., Defense Transportation Administration, Railroad Retirement Board, National Mediation Board and National Railroad Adjustment Board. In approving appropriations for the I.C.C., a Senate-House conference committee filed a report which "strongly recommended" that the commission make effective the recommendations of the "Wolf report." That report came out of the survey of the commission made by the Wolf Management Engineering Company at the behest of the Senate committee on interstate commerce.

The chairmanship of the Senate committee on interstate commerce changed near the end of the session. Senator Bricker, Republican of Ohio, got the assignment after the death of Senator Tobey of New Hampshire.

### New Appointments

Other actions of the Congress included confirmation by the Senate of three new members of the I.C.C., who were appointed by President Eisenhower. They are Owen F. Clarke, Howard G. Freas, and Kenneth H. Tuggle. Also appointed by the President and confirmed by the Senate was the new chairman of the Railroad Retirement Board—Raymond J. Kelly, successor to William J. Kennedy, who resigned. Meanwhile, the Senate took no action on the President's nomination of Charles H. Grossman for the directorship of the Bureau of Locomotive Inspection, Interstate Commerce Commission.

Just before the adjournment there was in the Senate a colloquy which revealed that the Republican Policy Committee has approved a plan to make the St. Lawrence seaway bill the "unfinished business of the Senate" when Congress convenes for the next session. This would require adoption of a motion to that effect, and no such motion was offered by the majority leader—Senator Knowland, Republican of California.

Meanwhile, Mr. Knowland assured Senator Ferguson, Republican of Michigan, that the seaway legislation "will have a very high priority at the beginning of the new session." Whereupon, Senator Butler, Republican of Maryland had this to say: "I shall vigorously oppose any motion that may be made . . . to bring up the seaway bill . . . I have heard it said that a filibuster in the Senate has never been broken. I leave that thought for the senator from California to consider."

## CA&E Gets Okay to Act As Suburban Shuttle

Plans have been approved by the Illinois Commerce Commission whereby electric suburban trains of the Chicago, Aurora & Elgin will no longer operate into the Wells street terminal in the Chicago Loop district.

As soon as the Chicago Transit Authority can complete a transfer terminal at Des Plaines avenue, in suburban Forest Park, CA&E trains will terminate there and Chicago-bound passengers will transfer to Transit Authority rapid-transit trains (*Railway Age*, June 15).

The Illinois commission specified, however, that the combination service must be fast and frequent, and that connections at Forest Park must be "reasonable." The commission also specified that through fares of the combined service must not exceed present CA&E fares for any class of ticket; that the commission retain the right to reopen the case if that is found necessary; and that plans for the transfer terminal must be filed with the commission.

A period of 120 days was allowed for the road and the Transit Authority to adjust their schedules to the new operation.

## House Group Gets A.A.R. Views on Tax Structure

The Association of American Railroads has made presentations to the House Ways and Means Committee in connection with the committee's study of the general tax structure.

A.A.R. statements covered these major topics: Depreciation and amortization; excise taxes; witholding; capital gains and losses, including

problems relating to basis; income taxes of lessor paid by lessee; net operating loss; cancellation of indebtedness; consolidated returns and intercorporate dividends, and corporate reorganizations and distributions.

The House committee is seeking evidence of inequities in the tax laws, and plans to draft legislation aimed at bringing the tax code up to date. Such legislation will be written after hearings are completed in mid-August. It will go before Congress next January.

The railroad industry views on excise taxes were presented on July 30 by W. Mason King, vice-president—traffic of the Southern, and Ernest C. Nickerson, vice-president — passenger services, New York Central.

Mr. King told the committee the 3 per cent excise tax on freight shipments "cannot be justified by even the most urgent revenue needs," and he urged its immediate repeal. Mr. Nickerson said removal of the 15 per cent excise on passenger travel would be a big step in helping railroads recover lost passenger business.

Claude W. Dudley, member of the A.A.R's General Tax Committee, told the House committee at a July 22 hearing that railroads should be permitted to take annual depreciation charges at a rate up to a maximum of 20 per cent on depreciable property acquired after December 31, 1953. He said this would provide real incentive to peacetime expansion by the rail carriers.

age of 70 (*Railway Age*, October 6, 1952, page 20).

Allyn C. Breed, one of the two assistant directors of the bureau, has served as acting director since Mr. Davidson's retirement. Mr. Breed, 71, is exempt from the usual retirement-at-70 rule because he comes under provisions of an Executive Order exemption granted in 1942 by President Roosevelt.

## Clarke Gets Safety Assignment at I.C.C.

Commissioner Owen F. Clarke has been given administrative supervision over the Bureaus of Safety and Locomotive Inspection, Interstate Commerce Commission. Mr. Clarke, a member of Division 3, was assigned to head the bureaus last week.

In his new role Commissioner Clarke succeeds former Commissioner William J. Patterson, who headed the two bureaus until his retirement.

Commissioner James K. Knudson has been named chairman of Division 3, succeeding Commissioner J. Monroe Johnson. Mr. Johnson will remain as a member of the division.

## Tuggle Wins Senate Approval for I.C.C.

The appointment of Kenneth H. Tuggle to the Interstate Commerce Commission was confirmed by the Senate July 31, and Mr. Tuggle is expected to join the commission in mid-August. He will fill the vacancy created by retirement of Commissioner Walter M. W. Splawn, whose unexpired term runs to December 31, 1954 (*Railway Age*, August 3, page 19).

Senate confirmation of Mr. Tuggle came shortly after he won approval of the Senate Interstate Commerce Committee. The committee held a hearing July 30, at which Senator Cooper, Republican of Kentucky, joined with two congressmen from that state in endorsing Mr. Tuggle.

Senator Johnson, Democrat of Colorado, told Mr. Tuggle at the hearing that as an I.C.C. appointee "you have my best wishes as well as my sympathy."

The senator said Mr. Tuggle would find he was taking on "a very difficult piece of work—not because of the colleagues on the commission but because of the neglect the commission has had from the Budget Bureau and the Congress.

"We haven't given you the help you need, and we haven't kept you revitalized," he said. "Many of the staff are fast approaching the age of retirement, and no replacements are in training. The commission is getting farther and farther behind in its work and transportation service that depends upon the commission is suffering because of the slowdown in work."

Mr. Tuggle told the committee he has had "very little" experience in transportation, but that he has had

# People in the News

## Grossman Named to Head Loco. Inspection Bureau

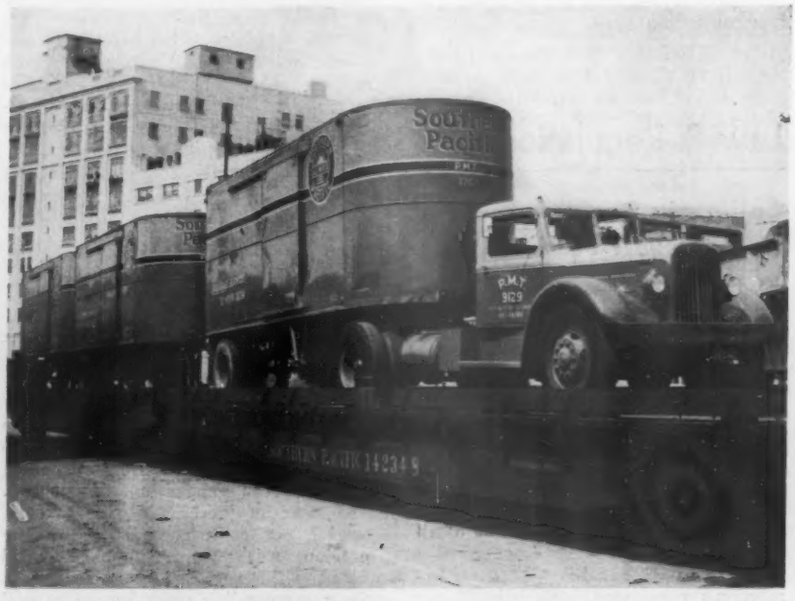
Charles H. Grossman of Albuquerque, N.M., has been nominated to head the Bureau of Locomotive Inspection of the Interstate Commerce Commission.

Mr. Grossman has been with the bureau since April 4, 1918, and is its senior inspector in length of service. He is a member of the Brotherhood of Locomotive Firemen & Enginemen.

The bureau directorship is a Presidential appointment, subject to confirmation by the Senate. Mr. Grossman's name was sent to the Senate July 31, shortly before adjournment, and no hearing was scheduled.

A spokesman for the Senate Interstate Commerce Committee said it was unlikely that any hearing on the nomination would be held before Congress reconvenes, probably next January. If Mr. Grossman is to assume his new position before then, it will be necessary for President Eisenhower to give him a "recess appointment."

Mr. Grossman, who is 62, would succeed Edward H. Davidson as director of the bureau. Mr. Davidson retired September 30, 1952, upon reaching the



**LATEST "PIGGY-BACK" SERVICE is that of the Southern Pacific between San Francisco and Los Angeles (*Railway Age*, August 3). Limited to subsidiary Pacific Motor Trucking Company trailers—two of which are handled on each of the 53½-ft. specially-modified flat cars—the new service is the first to be operated in West Coast states. Trailers are handled over the 470-mile rail route on overnight merchandise trains, while P.M.T. tractors handle the trailers between rail yards and shippers' docks. The SP says the service is available for certain carload traffic as well as for large-lot shipments moving at l.c.l. rates.**

"some experience" in rate-making cases. He said he sought the I.C.C. appointment because of a desire to have public service "in a position related to the public welfare and in which I can make some contribution."

The new I.C.C. appointee, a Republican, is a former lieutenant governor of Kentucky. He has practiced law at Barbourville, Ky., for 25 years.

## Education

### IC Becomes Classroom For Professors

Under a college-business exchange program sponsored by the Foundation for Economic Education, three college professors are studying, this summer, organization and operations of the Illinois Central.

Object of the program is to give college professors a "comprehensive exposure to operation of the railroad." This is being done through interviews with top management and other personnel, and by having the professors spend some time in each department.

The "students" are Dr. Fayette B. Shaw, associate professor of finance, College of Commerce, DePaul University, Chicago; Dr. Edward Noyes, associate professor of history, Memphis State College, Memphis, Tenn.; and Paul A. Thomas, associate professor of history, DePauw University, Greencastle, Ind. Their study of the IC is the second made since the program was inaugurated in 1948.

## Law & Regulation

### California Looks Into Its Transport Policies

On its own motion, the California Public Utilities Commission has begun a "sweeping" investigation of regulation of freight transportation within the state.

A commission spokesman said construction of the state's public utilities code governing regulation will be reexamined, as will definitions of types of carriers, commission policies and rules, and "such other matters as may be germane respecting regulation of all carriers of property for compensation within California subject to the commission's regulatory jurisdiction."

All such carriers have been made respondents. Hearings will begin in San Francisco September 16.

Back in 1946 the commission conducted a similar investigation of statewide freight transportation and came up with proposals for legislation plus administrative policies "designed to produce more effective and equitable regulation under existing statutes." The proposals were not adopted, although in 1951 the state senate did create a committee on regulation of highway carriers. This committee suggested further legislation in the 1953 legislature. This likewise failed to pass, but the general assembly, after hearings, suggested that the commission "reexamine the entire transportation industry in California and adopt such policies, together with their implementation, which will insure reasonable, efficient and dependable service to shippers and the general public."

That is what the commission is now undertaking.

**FIRST INTERNATIONAL RAILWAY LINK in North America was completed in 1853, when the St. Lawrence & Atlantic, now part of the Canadian National, began operating from Montreal to the U.S. border. A cairn marking the historic event is here being unveiled at Richmond, Que., by CNR veteran George Hall, as Donald Gordon (right), CNR president, watches.**

## Figures of the Week

### Freight Car Loadings

Loadings of revenue freight in the week ended August 1 totaled 793,754 cars, the Association of American Railroads announced on August 6. This was an increase of 13,049 cars, or 1.7 per cent, compared with the previous week; an increase of 60,678 cars, or 8.3 per cent, compared with the corresponding week last year; and a decrease of 19,634 cars, or 2.4 per cent, compared with the equivalent 1951 week.

Loadings of revenue freight for the week ended July 25 totaled 780,705 cars; the summary for that week, compiled by the Car Service Division, A.A.R., follows:

REVENUE FREIGHT CAR LOADINGS
For the week ended Saturday, July 25

| District | 1953 | 1952 | 1951 |
|---|---|---|---|
| Eastern | 130,960 | 101,233 | 140,077 |
| Allegheny | 157,884 | 93,092 | 172,323 |
| Pocahontas | 59,161 | 47,185 | 64,877 |
| Southern | 118,300 | 114,299 | 122,081 |
| Northwestern | 135,171 | 76,374 | 140,979 |
| Central Western | 122,153 | 116,619 | 119,972 |
| Southwestern | 57,076 | 58,388 | 60,167 |
| Total Western Districts | 314,400 | 251,381 | 321,118 |
| Total All Roads | 780,705 | 607,190 | 820,476 |
| Commodities: | | | |
| Grain and grain products | 56,137 | 58,486 | 60,005 |
| Livestock | 6,709 | 6,287 | 6,778 |
| Coal | 130,696 | 105,033 | 146,257 |
| Coke | 12,916 | 4,134 | 17,260 |
| Forest products | 45,734 | 49,524 | 49,012 |
| Ore | 96,237 | 12,268 | 93,096 |
| Merchandise l.c.l. | 65,271 | 68,356 | 69,735 |
| Miscellaneous | 367,005 | 303,102 | 378,333 |
| July 25 | 780,705 | 607,190 | 820,476 |
| July 18 | 791,414 | 609,000 | 805,378 |
| July 11 | 721,454 | 572,362 | 779,308 |
| July 4 | 670,232 | 447,516 | 588,159 |
| June 27 | 818,450 | 646,480 | 821,615 |
| Cumulative total 30 weeks | 21,892,431 | 20,771,993 | 22,911,634 |

### Study Shows How Small Shipments Are Divided

The Railway Express Agency handled about 5 per cent of all "small shipments" in 1951, for which the agency collected about 25.4 per cent of all small-shipments revenue. These figures are pointed up in a new study by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.

The bureau defined small shipments as those weighing 300 pounds or less. It said such shipments numbered more than 1.5 billion in 1951, and produced total revenue in excess of $993 million.

Several forms of transportation participate in the small-shipments busi-

## Congressional Transport Committeeman—Correction

Numerous readers have pointed out that the editorial, "Republicans and the Railroads," which appeared in the June 15 issue, was incorrect in stating that Senator Brewster is on the current Senate committee dealing with transportation matters. Senator Brewster was defeated in the primary by Frederick G. Payne, and is not a member of the present Congress.

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ness. Included in the bureau study are the REA; Class I railroads; Class I intercity motor carriers of property; Class I, II, and III motor carriers of passengers; large freight forwarders, and the Post Office. The latter includes fourth-class mail and air parcel post.

Largest percentage of the 1951 revenue, 46.31 per cent, went to fourth-class mail. The Post Office collected this amount by handling 82.29 per cent of all "small shipments."

Class I intercity motor carriers of property ranked third, revenue-wise, and collected 17.39 per cent of small-shipments revenue. The trucks handled 7.77 per cent of the shipments, slightly more than REA.

Small shipments handled by the express agency accounted for about 10 per cent of the total weight for all such shipments in 1951. The Class I motor carriers of property handled the largest percentage on a weight basis, 49 per cent, and fourth-class mail was second with 24 per cent.

The bureau's study is entitled "Statistics of Small Shipments," and is designated as Statement No. 5325. It carries the usual disclaimer to the effect that the study is issued "as information" and has not been "considered or adopted" by the commission.

# Organizations

## A.S.T. & T. Announces Conference Program

Separate panel discussions on what carriers, industries and government, respectively, can do to improve transportation in America's future, will highlight the second conference and seminar of the American Society of Traffic & Transportation, to be held at Pittsburgh, September 10-11, in collaboration with the University of Pittsburgh. The program, which is detailed below, also includes addresses by Clifford Hood, president of the U.S. Steel Corporation; Dr. Sidney L. Miller, professor of transportation at the University of Pittsburgh; and Robert R. Murray, undersecretary of commerce for transportation.

THURSDAY, SEPTEMBER 10

*9 a.m.*—Registration, Stephen Foster Memorial building, University of Pittsburgh.

*10 a.m.*—Call to order—Robert J. Bayer, president, A.S.T. & T., and editor, Traffic World.

*10:15 a.m.*—Welcome—Frank J. Ryan, sales director, Helm's New York-Pittsburgh Motor Express and general chairman of the conference.

*10:30 a.m.*—Panel Discussion: What Carriers Can Do to Improve Transportation in America's Future—Presiding officer: C. J. Goodyear, traffic manager, Philadelphia & Reading Coal & Iron Co., and vice-president, A.S.T. & T. Moderator: Albert P. Heiner, general traffic manager, Kaiser Steel Corporation. Panel members: Richard C. Colton, vice-president, Lykes Brothers Steamship Company; R. E. S. Deichler, vice-president, sales, American Airlines; R. J. McBride, director, Common Carrier Council, American Trucking Associations; P. A. Hollar, vice-president and assistant to president, Association of American Railroads; and Gordon C. Locke, executive secretary and associate counsel, Committee of Pipe Line Companies.

*12 noon*—Luncheon, Webster Hall Hotel—Presiding officer: Dr. G. Lloyd Wilson, chairman, Department of Transportation and Public Utilities, University of Pennsylvania, and director of education, A.S.T. & T. Toastmaster: Harry M. Werksman, president, Helm's New York-Pittsburgh Motor Express. Speaker: Dr. Sidney L. Miller, professor of transportation, University of Pittsburgh.

*2-4:30 p.m.*—Panel discussion, Stephen Foster Memorial Auditorium: What Industries Can Do to Improve Transportation in America's Future—Presiding officer: E. B. Smith, vice-president, General Mills, Inc., and executive vice-president, A.S.T. & T. Moderator: James K. Knudson, Defense Transport Administrator and member, Interstate Commerce Commission. Panel members: Russell White, traffic manager, Aetna Plywood & Veneer Co.; G. L. Wilson, Jr., assistant traffic manager, Rohm & Haas, Inc.; R. C. Waehner, general distribution manager, Lever Brothers Company; and Harold T. Reed, director of transportation, Line Materials Company.

*7 p.m.*—Annual dinner, William Penn Hotel—Presiding officer: Robert J. Bayer. Toastmaster: John A. Appleton, vice-president, Central region, Pennsylvania Railroad. Principal speaker: Clifford Hood, president, United States Steel Corporation.

FRIDAY, SEPTEMBER 11

*9:30 a.m.*—Panel discussion, Stephen Foster Memorial Auditorium: What Government Can Do to Improve Transportation in America's Future—Presiding officer: F. A. Doebber, director, coal and transportation department, Citizens Gas & Coke Utility, and vice-president and director of public relations, A.S.T. & T. Moderator: B. N. Behling, senior specialist in transportation, Legislative Reference Service, Library of Congress. Panel members: John C. Allen, assistant postmaster general; Dr. George P. Baker, James J. Hill Professor of Transportation, Harvard University; Dr. C. L. Dearing, deputy undersecretary of commerce for transportation; Harold M. Hammond, manager, Transportation and Communications Department, Chamber of Commerce of the United States; and Hugh W. Cross, member, I.C.C.

*12 noon*—Luncheon, Webster Hall Hotel—Presiding officer: C. H. Vayo, general traffic manager, Eastman Kodak Company, and chairman, board of directors, A.S.T. & T. Toastmaster: Warner B. Shepherd, general traffic manager, Aluminum Company of America. Speaker: Robert R. Murray, undersecretary of commerce for transportation.

*2:30 p.m.*—Stephen Foster Memorial Auditorium. Annual meeting and election of officers of the A.S.T. & T., followed by meeting of the board of directors. (Members and friends invited.)

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**Bi-monthly list of Meetings and Conventions begins on page 110.**

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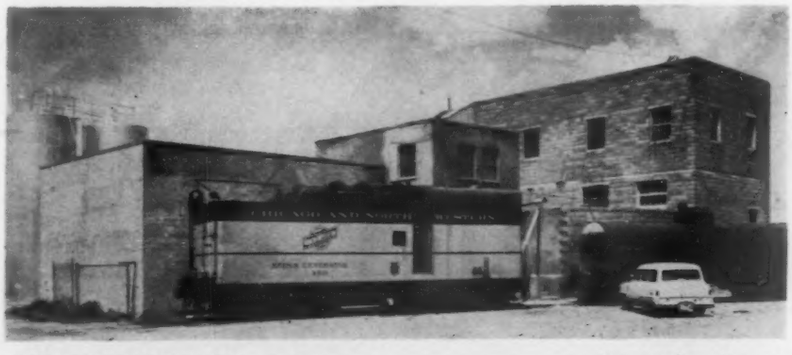
W. F. Ziervogel, secretary-treasurer of the **Association of American Railroad Dining Car Officers,** has retired from that position as a result of his retirement as superintendent of dining cars for the Missouri Pacific. Succeeding him as secretary-treasurer, pending the association's annual meeting at New Orleans October 15-16, is Pierre E. Griffith, superintendent of dining cars for the Wabash at St. Louis.

The New York office of the **Transportation Association of America** has been moved to 220 East 42nd street.



**EMERGENCY STEAM for this Sioux City (Iowa) rendering plant was supplied by a Chicago & North Western steam generator car following a flash flood on the Floyd river in June. The plant was called upon to render several hundred head of cattle killed when water hit stockyards, but was cut off from its normal steam source because part of a ¾-mi. steam line had been washed away. The C&NW car, equipped with a Vapor-Clarkson steam generator, allowed the plant to continue operations. The road also has used the car to pinch hit for the main boiler of a diesel shop during a repair period; to furnish steam to thaw iron ore; and to supply steam for pile driving, in addition to its more usual task of heating passenger trains hauled by diesel switching locomotives. Mechanical details of the car were described by *Railway Age* August 18, 1952.**

# Equipment & Supplies

## Western Pacific to Buy More "Cushion" Box Cars

Directors of the Western Pacific have authorized purchase of 10 cushion-underframe box cars at a cost of about $7,500 each. Two cars of this type have been in test service on transcontinental runs for several months. The directors' decision to authorize purchase of additional cars of

this type was based on the "almost negligible damage to highly fragile lading such as bottles, ceramics, television sets, electronic equipment, etc., in the test cars."

The test cars were built by the Pullman-Standard Car Manufacturing Company. They are PS-1's built with a rubber cushion at the middle of the underframe sill. This was coupled to the body by means of rubber compression pads. The WP tests were the first given the new underframe design in road service. As of press time for this issue, no actual order had been placed for the 10 additional cars.

### LOCOMOTIVES

Under an authorization reported in *Railway Age* June 8, page 19, the **Pennsylvania** has ordered 78 diesel locomotive units, as follows: From the Electro-Motive Division of General Motors Corporation—43 1,500-hp. road-switchers and two 1,500-hp. all-purpose units; from the American Locomotive-General Electric Companies—11 1,600-hp. road-switchers and five 1,000-hp. switchers; from the Baldwin-Lima-Hamilton Corporation—10 1,200-hp. switchers, three 1,200-hp. road-switchers, and one 2,400-hp. transfer unit; and from Fairbanks, Morse & Co.—three 1,200-hp. switchers.

### PASSENGER CARS

The **Erie** has ordered two sleeping cars from the Pullman-Standard Car Manufacturing Company. The cars, each of which will have 10 roomettes and five double bedrooms, are scheduled for delivery in the spring of 1954. Space which would normally have been occupied by a sixth double bedroom was given up in favor of centering all sleeping accommodations between the car trucks; extra space thus made available at the ends of the cars will be devoted to linen and supply closets.

The **Boston & Maine** has ordered from the Budd Company, for delivery early this fall, one rail diesel car—an RDC-3 unit, accommodating 48 passengers, plus railway post office and baggage-express compartments. Receipt of this car will bring the B&M's total RDC fleet to seven units.

The **Chicago, Rock Island & Pacific** has received two RDC-3 self-propelled combination passenger-baggage-mail coaches from the Budd Company. On August 2 the cars were placed in service on the schedules of Rock Island Trains 51 and 52 (the "Choctaw") between Little Rock, Ark., and Oklahoma City, Okla.

### MARINE

The **New York Central** has ordered from the Bethlehem Steel Company 10 all-welded steel deck scows, at an estimated unit price of $49,466, and nine all-welded steel covered freight barges at an estimated unit price of $66,900. Three of the scows and two of the barges are scheduled for delivery in September; four scows and three barges in October, and three scows and four barges in November. All the equipment is for use in New York harbor.

## Supply Trade

Stockholders of the **Westinghouse Air Brake Company,** at a meeting to be held August 25, will be asked to authorize issuance of $50 million of long-term debt. Included in this total will be a proposed $35-million issue of debentures, which are expected to be offered publicly sometime in September and to run for 25 years. The debentures would be used to retire approximately $30 million of short-term debt owed to the Mellon National Bank & Trust Co. of Pittsburgh by **LeTourneau-Westinghouse Company,** a new subsidiary of Westinghouse Air Brake, created when the latter purchased earth moving equipment business from **R. G. LeTourneau, Inc.** Balance of the debentures would be used to increase working capital.

Named as manager of the newly created engine division of **Caterpillar Tractor Company,** at Peoria, Ill., is **H. H. Howard,** director of domestic sales, while **W. S. Zeigler,** assistant director of domestic sales, has been advanced to succeed him. Appointed to head the newly established sales promotion department as manager is **W. K. Cox,** advertising manager.

**Farr Company,** Los Angeles, has appointed **Filter Engineers, Inc.,** Chicago, and **Air Filter Sales & Service of Miami, Inc.,** as sales and service representatives in their respective areas.

**Chicago Steel Service,** Kildare avenue and 45th street, Chicago, has been appointed distributor for **Rigidized Metals Corporation,** Buffalo, N.Y.

**Speedways Conveyors,** Buffalo, N.Y., has moved to a new location at 202-208 Rhode Island street. Covering approximately 50,000 sq. ft., the new plant provides twice as much space as was formerly occupied and the company expects to double its production.

**International Harvester Company** has established a separate industrial power division sales department, with headquarters at Melrose Park, Ill. **I. P. Payne,** assistant manager, general sales, has been appointed manager of the new department.

**COMPLETION OF A NEW DOUBLE-TRACK FILL (right) to replace an old timber trestle (left) at Matawan, N. J., has permitted the Central of New Jersey to cut by from one to three minutes the running times of trains on its Seashore branch. Other schedule changes were made effective at the same time. The fill extends from 33 ft. above the meadow level down to solid ground 60 ft. below that level. Located on the New York & Long Branch Railroad—jointly owned by the CNJ and the Pennsylvania—the fill also is used by PRR Jersey shore trains.**

**Ernest F. Gladwell,** for many years western and Canadian sales representative for the **Buffalo Brake Beam Company,** has been appointed assistant to vice-president—sales, at Buffalo, N.Y.

## New Facilities

**Atchison, Topeka & Santa Fe.**—In connection with reconstruction of Bridge 356-B, south of Guthrie, Okla., C. E. Clark, Kansas City, has been awarded a contract covering construction of two reinforced concrete piers with pile foundations.

**Great Northern-Northern Pacific.**—NP company forces will construct a new GN-NP joint freight and passenger depot at Davenport, N.D. The building will be of one-story frame construction finished with asbestos cement shingles. In connection with it, the present manually-operated interlocking plant will be replaced with automatic equipment. Cost of the new station and interlocking plant is estimated at $36,800.

**Illinois Terminal.**—A new industry track is being built to serve a new $5-million auto frame plant being built by A. O. Smith Corporation on an 80-acre site north of Granite City, Ill. Railroad forces will build the trackage on IT property at a cost of about $75,000; the manufacturing company is arranging for construction of lead-offs on its property. When completed, the new plant is expected to produce traffic averaging about 50 carloads a day. It will be served exclusively by the IT.

**St. Louis-San Francisco.**—The following projects have been authorized since publication of a previous report in *Railway Age* April 13. Company forces will perform all work in connection with these projects: Install centralized traffic control between Nash, Mo., and Turrell, Ark.—$1,049,520; construct a 7,600-ft. 150-car capacity siding at Brooks Junction, Mo.—$47,100; rearrange trackage and install Whiting car washer at St. Louis—$72,910; install radios on 42 diesel locomotive "A" units—$61,260; expand mechanical facilities at Lindenwood, Mo.—$53,408; install DeVilbiss paint spray booth in paint shop at Springfield—$41,460; rework bridge 187.1 over Tombigbee river at Aliceville, Ala.—$50,505; construct new yard office and wash and locker building at Fort Worth, Tex.—$33,000; extend sidings at 11 locations in Arkansas, Oklahoma and Alabama for diesel operation—$425,000; modernize interlocking machine and rearrange trackage at Grand avenue, St. Louis—$147,625; purchase shop machinery and power tools to equip work equipment repair shop for engineering department at Springfield—$29,850.

## Securities

### Applications

**CENTRAL OF GEORGIA.**—To assume liability for $5,460,000 of series Y equipment trust certificates, to finance in part one diesel unit and 1,055 freight cars costing an estimated $6,829,362.

| | Description and Builder | Estimated Unit Cost |
|---|---|---|
| 1 | 1,500-hp. road-switcher (Electro-Motive Division, General Motors Corporation) | $185,178 |
| 1,000 | 50-ton box cars (Pullman-Standard Car Manufacturing Company) | 6,100 |
| 50 | 70-ton covered hopper cars (Pullman-Standard) | 7,984 |
| 5 | 125-ton depressed center flat cars (Company shops) | 28,994 |

The certificates, to be dated September 1, would mature in 15 annual installments of $364,000 each, beginning September 1, 1954. They would be sold by competitive bidding, with the interest rate to be set by such bids.

**LOUISVILLE & NASHVILLE.**—To assume liability for $7,650,000 of series M equipment trust certificates, the first installment of a proposed $9,645,000 issue. The present issue would be used to finance in part the cost of 1,750 freight cars.

| | Description and Builder | Estimated Unit Cost |
|---|---|---|
| 1,000 | box cars (Pullman-Standard Car Manufacturing Company) | $5,920 |
| 500 | box cars (Pressed Steel Car Company) | 7,300 |
| 250 | 95-ton ore cars (Pullman-Standard) | 10,020 |

The certificates, to be dated August 15, would mature in 15 annual installments of $510,000 each, beginning August 15, 1954. They would be sold by competitive bidding, with the interest rate to be set by such bids.

### Authorization

**NEW YORK CENTRAL.**—To issue $800,000 of 3½ per cent promissory notes to the Bethlehem Steel Company in connection with acquisition of 10 scows and nine barges costing $1,096,760 (*Railway Age*, July 20, page 26).

### Security Price Averages

| | Aug. 4 | Prev. Week | Last Year |
|---|---|---|---|
| Average price of 20 representative railway stocks | 64.64 | 63.31 | 64.20 |
| Average price of 20 representative railway bonds | 90.75 | 90.27 | 92.93 |

### Dividends Declared

**NASHVILLE, CHATTANOOGA & ST. LOUIS.**—$1, quarterly, payable September 1 to holders of record August 11.

**READING.**—4% 1st preferred, 50¢, quarterly, payable September 10 to holders of record August 20.

**ST. LOUIS-SAN FRANCISCO.**—62½¢, quarterly, payable September 15 to holders of record September 1.

**Table of Selected Income and Balance Sheet Items of Class I Steam Railways, for the month of April and the first four months of 1953 and 1952, appears on page 111.**

## Railway Officers

**EXECUTIVE**

# May Elected A.A.R. Vice-President

### New York Central officer will succeed James H. Aydelott as head of Operations and Maintenance Department

Richard G. May, assistant vice-president of operations and maintenance of the New York Central, has been elected vice-president in charge of the Operations and Maintenance Department of the Association of American Railroads.

Mr. May, 49, will assume his new position September 1. He will succeed James H. Aydelott, who will retire August 31 after 51 years of railroad service.

William T. Faricy, president of the A.A.R., announced Mr. May's election following the July 31 meeting of the A.A.R. board of directors. Mr. May has served continuously with the NYC

**Richard G. May**

**James H. Aydelott**

since 1928, when he entered railroad service as a rodman.

Mr. Aydelott, who will be 70 August 13, began railroad service in 1902 as a stenographer and clerk for the Chicago, Burlington & Quincy. He held various positions with the Burlington, and in 1936 was promoted to general manager of that road. He remained in this capacity until 1947, when he was elected a vice-president of the A.A.R.

During World War II, Mr. Aydelott served with the Office of Defense Transportation as director of its Division of Railway Transport. He also has served in an advisory capacity with other government agencies, including the Army, the Munitions Board and the National Security Resources Board.

Mr. May, after joining the New York Central, served in the engineering department until 1932, when he was appointed assistant supervisor of track at Cleveland. He became trainmaster at Watertown, N.Y., in 1939; trainmaster at Weehawken, N.J., in 1941; assistant superintendent at New York City in 1946, and superintendent at Albany, N.Y., in 1948.

After being named general manager of the Boston & Albany at Boston in 1949, Mr. May was promoted to manager of freight transportation of the NYC the following year. In 1952, he was appointed to his present position of assistant vice-president.

Mr. May was born at Murry, Pa., August 13, 1904. He attended Indiana Business College and received his civil engineering degree from the Chicago Technical School. He also is a recent graduate of the Advanced Management Program at Harvard University's Graduate School of Business Administration.

**WILLIAM J. QUINN, general counsel of the Soo Line, who has been elected vice-president and general counsel (*Railway Age*, June 1).**

**George Dunglinson, Jr.,** who retired as executive vice-president of the NORFOLK & WESTERN in August 1952, but who continued to act as chairman of the road's development committee, has retired from that position.

**A. N. Reece,** assistant to president of the KANSAS CITY SOUTHERN at Kansas City, has retired (*Railway Age*, June 22). Mr. Reece entered railway service in 1903 with the Santa Fe, and from 1905 to 1911 was, successively, transitman, assistant engineer, building inspector, chief clerk and general superintendent transportation for the St. Louis-San Francisco. He joined the KCS in 1911 as assistant engineer and from 1913 to 1942 served as office engineer, division engineer and chief engineer. He was named assistant to president in 1942.

As reported in *Railway Age* July 6, **Eric C. Hallberg** has been promoted to assistant vice-president, rates, of the ERIE at New York, succeeding **Alfred Blauel,** retired. Mr. Hallberg, born in Sweden, entered Erie service in 1909.

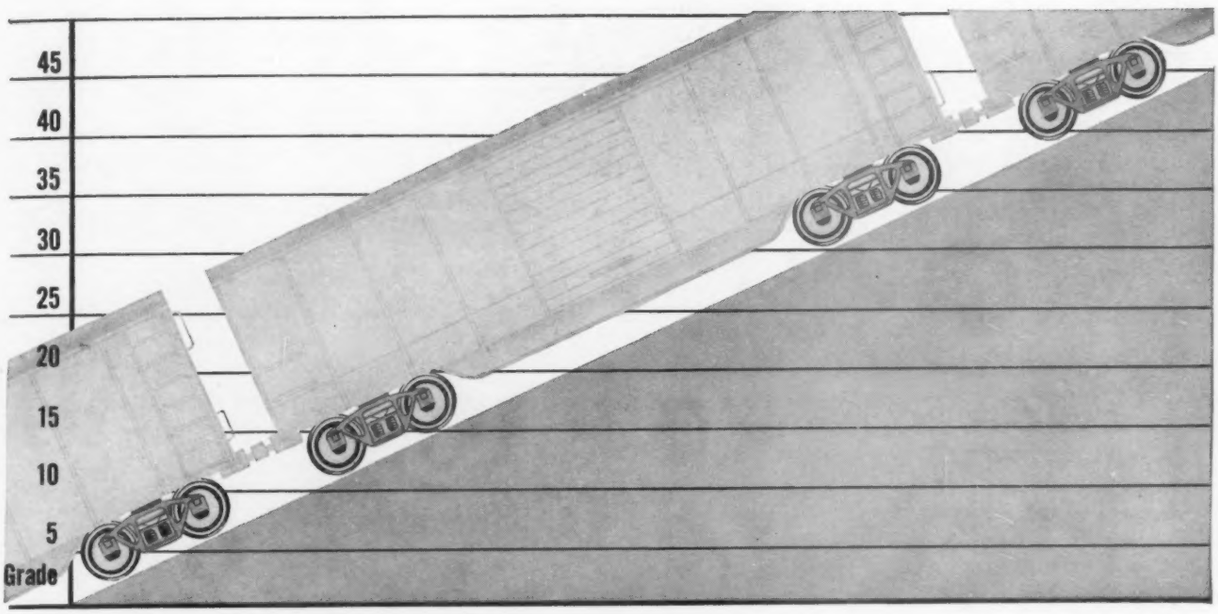
**Eric C. Hallberg**

He was promoted to general freight agent at Chicago in 1939, assistant freight traffic manager in 1945, and (*Continued on page* 104)

## "CASEY" JONES DAY

**A WHISTLE SOUNDED.—For the first time since John Luther Jones met death and fame in a rear-end collision at Vaughn, Miss., April 29, 1900, his personal locomotive whistle was sounded in public on July 24. The occasion was "Casey Jones Day," observed by all of Yazoo county. Present for ceremonies at the scene of the wreck were Sim Webb (foreground), "Casey's" fireman, who survived the crash by jumping; Dr. John K. Bettersworth, of the Mississippi State Historical Commission; Mrs. Jones; and Claude Pepper, historian. The famed whistle (indicated by arrow) is beyond Mr. Pepper.**

**A MARKER WAS UNVEILED.—Before some 3,000 guests, Mrs. Jones unveiled the state's historical marker which will perpetuate the scene of the accident that became a legend. Fireman Webb recounted the events that led up to the crash. And for a final touch, the sexton of Black Jack Methodist Church obligingly tolled the bell which had been on the "Cannonball's" locomotive and is now something of a landmark around Vaughn. The Illinois Central has spent considerable time devolping and publicizing the facts of "Casey's" life, although it did not officially participate in the ceremonies.**




# Car Wheels Pull Steep Grade

**from 1938 to 1953, chilled car wheels pulled 45% grade**

AMCCW wheels literally "made the grade" shown above . . . a graphic presentation of the improved performance record of AMCCW wheels over the past 15 years. The base used is car miles on chilled wheels per chilled wheel failure, according to ICC reports.

| | |
|---|---|
| **1938-1942** | **89,000,000 car miles** |
| **1943-1947** | **93,400,000 car miles** |
| **1948-1952** | **128,600,000 car miles** |

In 1952, the record showed 145,000,000 car miles per chilled car wheel failure; in 1953 to date the record looks even better.

Those who buy AMCCW chilled car wheels this year are getting even better performance than the statistics show because today's improved chilled car wheel* is still outperforming its predecessor, some 6,700,000 of which are still in service. There is every reason, therefore, to expect the rate of improvement charted above to continue into the future.

*** The AMCCW chilled car wheel approved by the AAR in September 1950 — more brackets, thicker, heavier, more continuous flange support; heavier tread on both rim and flange sides.**

In good supply
Available locally
Short-haul delivery
Reduced inventory
Low first cost
Low exchange cost
Increased ton mileage
High safety standards
AMCCW plant inspection
Easier shop handling

**ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS**
**445 North Sacramento Boulevard, Chicago 12, Ill.**

Albany Car Wheel Co. • American Car & Foundry Co. • Griffin Wheel Co.
Marshall Car Wheel & Foundry Co.
Pullman-Standard Car Mfg. Co. • Southern Wheel (American Brake Shoe Co.)

## ANOTHER SHORT LINE SLASHES COSTS with

# GENERAL MOTORS LOCOMOTIVES

### 53.75% Saving in Operating Costs for The LOUISIANA and NORTH WEST RAILROAD

Here's another "facts-and-figures" case history that shows what happens when General Motors Diesel locomotives replace steam power.

Two 800 H.P., 115-ton switchers were delivered to The Louisiana and North West Railroad in December, 1950.

Replacing four steam locomotives, the two General Motors Diesels handle one freight train per day except Sunday in each direction between McNeil, Arkansas and Gibsland, Louisiana, a distance of 61½ miles. Dispatching is handled entirely by radio phone. Lading consists of pulpwood, petroleum and agricultural products.

### LOOK AT THE SAVINGS

Figures for the first year's operation of the Diesels, as compared to the previous year's operation with steam power, show a total saving of $49,583.62—a reduction of over 53%. Fuel costs alone went down from $32,500 in 1950 to $8,000 in 1951. *The cost per ton of freight carried dropped from 19.99 cents to 9.79 cents.*

THE LOUISIANA AND NORTH WEST RAILROAD CO.

STATEMENT OF COMPARATIVE COSTS—DIESEL VS. STEAM LOCOMOTIVES

(4 Steam Locomotives in Service 1950, 2 Diesel Locomotives in Service 1951) Period: Steam Locomotives: January 1, 1950 to December 31, 1950
Diesel Locomotives: January 1, 1951 to December 31, 1951

| | STEAM LOCOMOTIVES | GM DIESEL LOCOMOTIVES |
|---|---|---|
| Total Operating Expenses | $44,680.20 | $28,186.50 |
| Maintenance | 45,570.80 | 14,484.12 |
| Fuel | $92,250.00 | $8,000.00 |
| | 38,580 | 38,580 |
| | $2.395 | $1.160 |
| | 441.4 | 441.4 |
| | $0.1999 | $0.0979 |

On the L. & N. W. R.R., as on many other short lines, standard 800 H.P. General Motors Diesel switching units easily handle maximum tonnage and speed requirements, with a big saving in cost. 1200 H.P. units also are available to handle faster schedules.

## LOWER COST MAINTENANCE

One outstanding advantage of General Motors locomotives in short-line service—and on trunk lines too, for that matter—is the basic simplicity of the GM 2-cycle Diesel engine, with its easy accessibility for maintenance and servicing. For example, two men can remove and replace an EMD cylinder head, liner and piston in not over three and a half hours *without* the use of an overhead crane.

Moreover, many parts and components are interchangeable between models. Pistons, liners, rings and other wearing parts fit all sizes of General Motors locomotives—and only one size traction motor is used. This unique standardization, plus Electro-Motive's high volume manufacturing efficiencies, means replacement parts *cost less*—for the short line as well as the trunk line—and railroads can operate with smaller stocks of spares. Both new parts and factory-rebuilt components, fully modernized and warranted as new, are readily available through Electro-Motive's nationwide network of Factory Branches and Parts Warehouses.

If you are thinking of dieselizing your line, it will pay you to get all the facts about General Motors Diesel locomotives. Men with the world's widest experience in railroad Diesel application will prepare tonnage rating surveys and motive power analyses for you—*without obligation*. Write, wire or phone today if you'd like to have an Electro-Motive representative call.

The L. & N. W. Diesel maintenance shop, built at Gibsland, is a model of neatness, efficiency, planning and cleanliness that would do credit to a much larger railroad.

## ONE MANUFACTURER—ONE RESPONSIBILITY

All phases of General Motors locomotive construction—the design and manufacture of all major components as well as their assembly—are centered in one organization. This concentration of all necessary functions in a *single* organization with undivided responsibility results in a balance of design, uniformity of high-quality manufacture and service and parts follow-up unrivaled in the motive power field.

**ELECTRO-MOTIVE DIVISION**

**GENERAL MOTORS**

*La Grange, Illinois • Home of the Diesel Locomotive*

In Canada: GENERAL MOTORS DIESEL, LTD., London, Ontario

# SAFETY KEEPS PACE WITH SERVICE ON MORE THAN 100 RAILROADS

Service improves at a fast pace on American railroads. And, with the installation of WRRS Model 10 Automatic Signals, safety doesn't lag behind. Over 100 railroads have come to depend on the Model 10 Signal to keep their routes safe. Thousands of WRRS Model 10's guard busy railroad-highway crossings, yet there is not one accident on record as a result of operation failure on the part of these signals. We think that's a real safety record.

And Model 10's save costs, too . . . the first cost of installation and the second cost of maintenance. Analyses show that *numerous* crossings can be made safe with Model 10 installation for less than the cost of a *single* grade separation. Beside initial saving, Model 10's cost little to maintain . . . there is virtually no replacement of parts with these signals on the job.

**WESTERN RAILROAD SUPPLY CO.**
**2428 S. Ashland Ave., Chicago 8, Illinois**

*Write for*
**SAFETY IS YOUR BUSINESS**
*Address desk RA-853*

**Model 10**

AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES—MAKER OF RAILWAY SIGNALING ACCESSORIES

Model 10 installation on the C.R.I.&P. at 95th St., Chicago. Unusually heavy traffic (120 trains, 35,000 to 40,000 vehicles per day) give these signals the acid test for safety and efficiency. Record? Not a single fatality has occurred since installation in 1937.

# "G"* HOT BOXES cause trouble too...!

**"42 Million Miles Between Hot Boxes"**

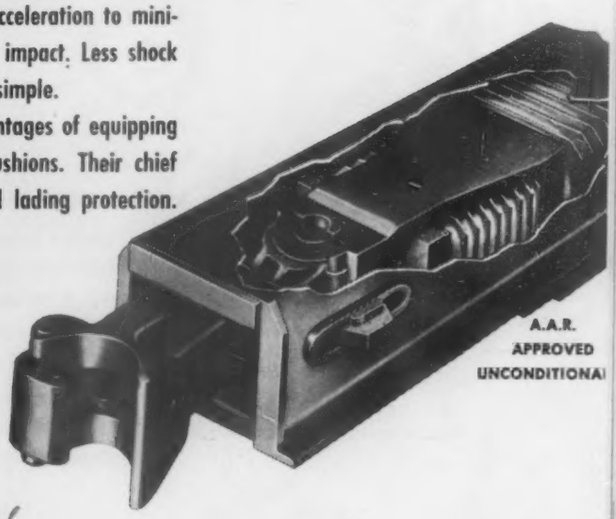
In RAILWAY AGE (December 24, 1949) is a report of hot boxes on the Twin Cushion-equipped New York Central Pacemaker cars, titled as above, serving to indicate the effectiveness of Twin Cushion impact protection in reducing the incidence of hot boxes.

* "G", the unit of change in velocity which is equal to the pull of gravity or 32.2 feet per second per second.

Never heard of a hot box "G"? Actually many hot boxes are the result of rapid changes in acceleration. As a car accelerates, due to impact, the car body tends to lift off the trucks reducing the load on the journal bearings. This permits waste to be carried up by the axle and grabbed under the bearing as the body settles back into position. Hot boxes are a natural consequence.

You can reduce these hot box "G"s by equipping cars with Waughmat Twin Cushions . . . reduce the violent changes in acceleration to minimize transfer of the shock of impact. Less shock . . . fewer hot boxes. It's that simple.

This is but one of the advantages of equipping cars with Waughmat Twin Cushions. Their chief advantage is car-structure and lading protection.




To protect cars and lading, to reduce hot boxes . . . for "G" control, specify

# WAUGHMAT

## DOUBLE-ACTING

TRADE MARK REGISTERED *Twin Cushions*

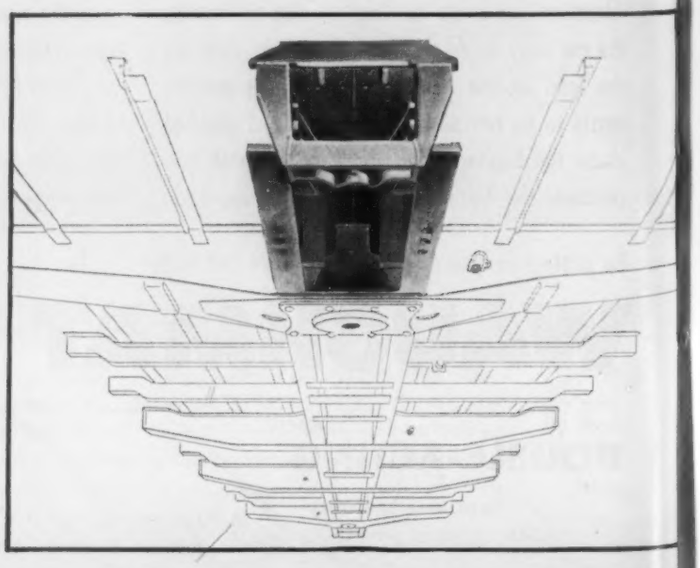
WAUGH EQUIPMENT COMPANY, New York · Chicago · St. Louis · Canadian Waugh Equipment Company, Montreal

**STALKING A TROUBLE-MAKER IN THE SWITCH YARDS**

Traveling over 100,000 miles a year to find out what happens to box cars on the line is the job of Pullman-Standard Sales and Service Engineers. Here they are getting facts on impact, facts that prove the quality of PS-1 construction. But they also observe maintenance problems involving box cars that eventually become improvements in the PS-1. Pullman-Standard design is continually improving because research begins on the line.

**THE WELDED DRAFT SILL ASSEMBLY**

Pullman-Standard welded bolster center fillers, draft lugs, and strikers are permanently tight. This is just one of the many results derived by combining "on-line" engineering with research and development . . . one of the many reasons why the time-proved, road-proved PS-1 is winning such wide acceptance by so many railroads.



# Research begins on the line

**FIELD DATA PROVIDE THE ESSENTIAL OPERATING FACTS THAT HELP IMPROVE THE PS-1**

Freight car operations offer a thousand variables. And it's the job of Pullman-Standard Sales and Service Engineers to find out what they are, because the PS-1 has to *perform efficiently all the time.* Engineering that started in the field has made the sturdy PS-1 an outstanding freight car. This kind of research is constant, which is why the PS-1 is continually being improved—why it is always the best buy. "On-line" research plus exhaustive tests at Pullman-Standard Research and Development Laboratories mean that the specifications for the standardized PS-1 are never "frozen."

For instance, the all-welded draft sill and bolster center filler assembly resulted from the continued effort to develop a stronger more unified construction. It's now a part of the PS-1 that railroads don't have to worry about. This is just one of many examples of what makes the PS-1 a better box car . . . and how mass production techniques have been applied to build a quality box car to fulfill railroad needs. Ask for the fast delivery schedule of the record-breaking PS-1.

*YOUR NEEDS CREATE THE PULLMAN "STANDARD"*

# PULLMAN-STANDARD

**CAR MANUFACTURING COMPANY**

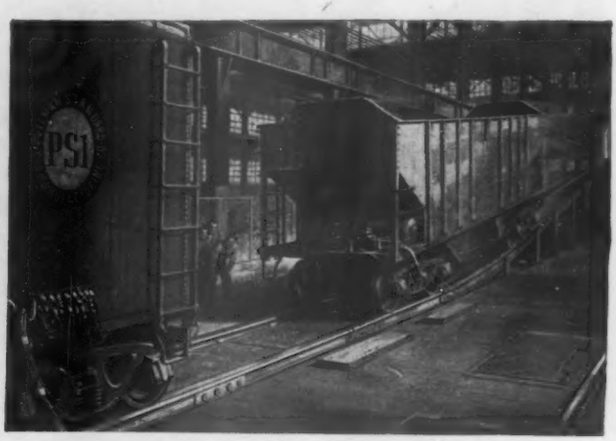
SUBSIDIARY OF PULLMAN INCORPORATED

79 EAST ADAMS STREET, CHICAGO 3, ILLINOIS

BIRMINGHAM, PITTSBURGH, NEW YORK, SAN FRANCISCO, WASHINGTON

**THE PROOF IS IN YOUR OWN YARD**

Look at any freight consist and count the number of PS-1s. Here is proof that the standardized box car is the best answer to the rising costs of today's freight operations. The sturdy PS-1 is being bought and reordered by a majority of the country's leading railroads—proof that quality as well as quantity lead to the selection of a box car designed for long service life.




**GETTING THE GOODS ON A CAR KILLER**

Operation impact! A planned collision to see how the standardized PS-1 takes it. The all-welded hopper car is fully loaded as it comes down the ramp to smash into the PS-1. Speeds as high as 12 mph are obtained in order to get the data that make the PS-1 a better and better box car. This scene is a familiar one at Pullman-Standard's Research and Development Laboratories.

**AIRCO HELMETS:** A complete line of helmets and face shields in a wide variety of styles and types. In any kind of service, these Airco products provide the greatest possible operator safety and comfort.

**AIRCO HOLDERS:** Famous Jackson jaw-type and Martin Wells screw-type holders. Nineteen Jackson models, from 200 to 500 amperes. Six Martin Wells, including the Heavy Duty Model 6S — the only holder on the market that will handle 700 amperes!

**AIRCO GLOVES:** The same quality that makes other Airco accessories the best value you can buy extends to welders' gloves and leather sleeves.

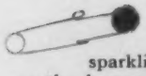
**AIRCO CABLE AND CONNECTIONS:** Unrivalled dependability, long life and flexibility. Sizes from 4 to 4/0, for wide range of amperages at varying distances from welding machine. Make sure of good connections with Airco ground clamps, cable splicers, Quik-Trik cable connectors and cable lugs.

# RELY on AIRCO quality in both fields

. . . And soapstones, tip cleaners, clamps, circle cutting attachments, carrying cases, carbon pencils, carbon torches, graphite electrodes, chipping hammers, brushes . . . you name it — Airco has it at low prices. Call your Airco dealer or write us directly for your copy of Catalog 13, "Airco Welding Accessories," and complete price list.

**AIRCO GOGGLES:** for gas welding or cutting. Precision made, they afford excellent ventilation with maximum eye protection. All types exceed National Bureau of Standards requirements.

**AIRCO CYLINDER TRUCKS:** Make your welding and cutting outfit easily portable with an Airco two-wheel hand truck. Strong, rigid, welded steel frame; broad steel platform. Five models offer wheel sizes and styles for every type of surface.



**AIRCO SPARKLIGHTERS:** Save time and trouble with the standard Airco sparklighter and its replaceable round file, or the heavy-duty Airco Tri-Flint model, which carries three flints in a rotating holder.

**AIRCO TWIN-HOSE:** Two lines of hose moulded into a single, light, flexible unit. Close, tight braid permits thicker rubber cover for greater wear resistance.

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***at the frontiers of progress you'll find***

AN AIR REDUCTION PRODUCT

# Here's Proof of Performance...

**SOUTHERN RAILWAY SYSTEM'S** crack passenger train, "The Southerner", is shown here crossing the Lake Ponchartrain Bridge.

# 70-year-old piles in Lake Ponchartrain Bridge are protected by Creosote Oil

**A CLOSEUP VIEW** of some of the 70-year-old pressure-creosoted piles in the Lake Ponchartrain Bridge.

● Here is an amazing story of the ability of Creosote Oil to give wood protection that is really long lasting.

Some 800 pressure-creosoted piles in the Lake Ponchartrain Bridge of the Southern Railway System have been in use since 1883. Used in building the original 22-mile bridge 70 years ago, these piles were kept in service in the remaining section when the bridge was shortened to 5.75 miles in 1927. They represent 40% of the original piles in this 5.75 mile section.

In spite of storms, abnormal tides and passage of 20 passenger and freight trains daily, it is estimated that the remaining piles may last another five to ten years before replacements are necessary.

Be guided by records of performance like this when you choose a wood preservative. When you use Creosote Oil, you know you have a preservative that has proved its ability to lengthen the life of wood and hold down replacement costs.

And for finest performance specify U·S·S Creosote Oil. Its uniform quality is the result of continuous processing in United States Steel's extensive tar distillation facilities. For complete information, contact our nearest Coal Chemical sales office or write directly to United States Steel Corporation, 525 William Penn Place, Pittsburgh 30, Pa.

## U·S·S CREOSOTE OIL

USS

3-1257

UNITED STATES STEEL

# USE GENUINE BALDWIN DIESEL PARTS

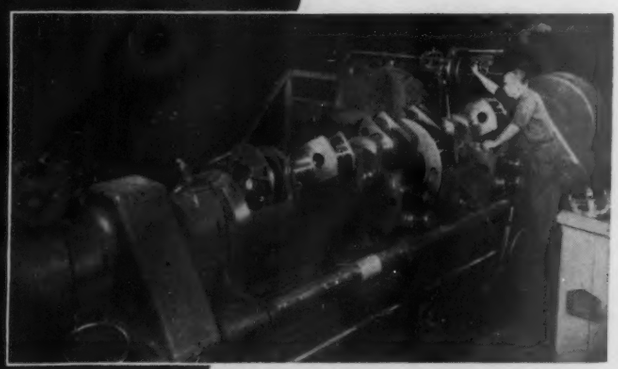
BALDWIN DIESEL Crankshafts exemplify the precise designing and engineering skills that give you constant peak performance from your Baldwin diesels. Dynamically balanced to close limits, they reduce vibration to an absolute minimum for a velvet-smooth power flow. Special design features cut main bearing loads and reduce wear for long service life.

Use only genuine Baldwin diesel replacement parts to eliminate the double penalty of idle engine time and extra labor costs. They are available at any one of Baldwin's seven conveniently located warehouses.

BALDWIN BLH LIMA-HAMILTON

**BALDWIN**

If they came in a Jewel Box— they couldn't be Finer!



This careful crankpin grinding assures precision finish to a tolerance of 8 micro inches.

This electronic Crankshaft Balancer balances every Baldwin Crankshaft to a maximum of 2 in.-lb. both statically and dynamically.

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# NEW

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United States Rubber Company, the only electrical wire and cable producer to grow its own natural rubber and to manufacture its own plastics and synthetic rubber, makes a complete line of electrical wires and cables for every industrial and domestic application. Just published is the 1953 "U.S." Catalog, essential for men who specify, install or maintain electrical wire and cable. Send for your free copy to address below. Here are the catalog chapter headings:

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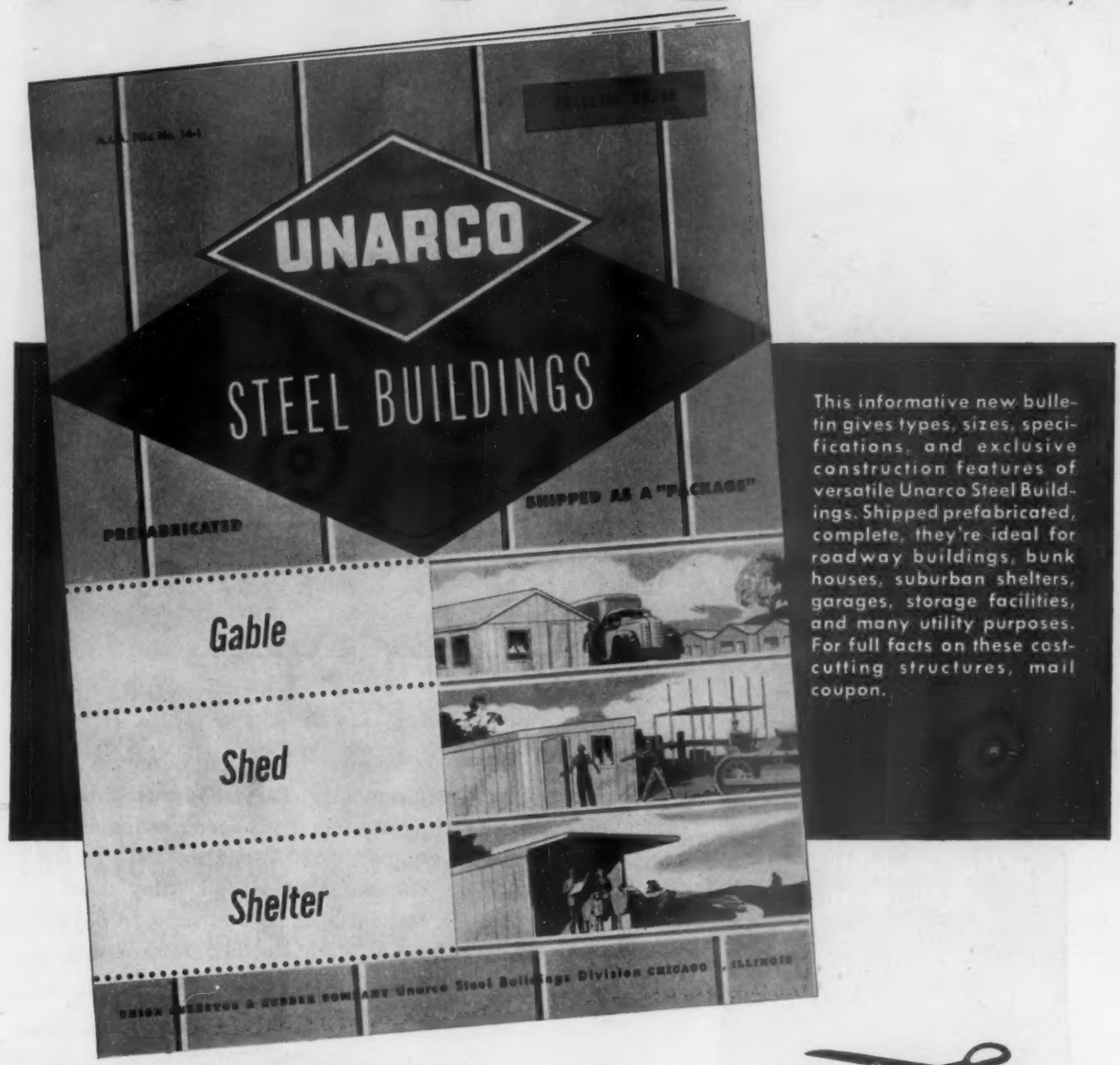
***"U.S." Research perfects it...***
***"U.S." Production builds it***

U.S. RUBBER
SERVING THROUGH SCIENCE

# UNITED STATES RUBBER COMPANY

*ELECTRICAL WIRE AND CABLE DEPARTMENT • Rockefeller Center, New York 20, N. Y.*

# JUST OFF THE PRESS!




This informative new bulletin gives types, sizes, specifications, and exclusive construction features of versatile Unarco Steel Buildings. Shipped prefabricated, complete, they're ideal for roadway buildings, bunk houses, suburban shelters, garages, storage facilities, and many utility purposes. For full facts on these cost-cutting structures, mail coupon.

UNARCO STEEL BUILDINGS DIVISION

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Please send me new Unarco Steel Buildings Bulletin No. 10.

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**YOUNGSTOWN**
*Cold Finished*
**CARBON AND ALLOY STEEL BARS**
Uniformly satisfactory in service because—
Machinability is outstanding
Tolerances are uniformly close
Metallurgical characteristics are rigidly controlled

QUALITY YOUNGSTOWN SERVICE

## OF PRODUCING STEEL

●Here's why the bars you get from Youngstown will meet your exact requirements. They're drawn from steel produced by an organization that's been making and rolling highest quality steel for 50 years.

Youngstown Cold Finished Carbon and Alloy Steel Bars are furnished in standard shapes and sizes, in both coils and straight lengths. For further information, phone or write our nearest District Sales Office.

# Youngstown

**COLD FINISHED CARBON AND ALLOY STEEL BARS**

**THE YOUNGSTOWN SHEET AND TUBE COMPANY** *Manufacturers of Carbon, Alloy and Yoloy Steel*

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PIPE AND TUBULAR PRODUCTS - CONDUIT - BARS - RODS - COLD FINISHED CARBON AND ALLOY BARS - SHEETS - PLATES - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - RAILROAD TRACK SPIKES

# for Edgewater rolled steel Wheels...

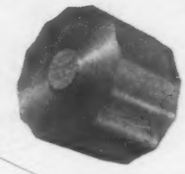
## the steel must be right—

## ...so we make it ourselves!

Quality is first—tonnage second—in the daily operation of Edgewater Open Hearth Furnaces. Every step of the melting and refining process is closely watched and controlled. Ingots are bottom-poured, as in the best ordnance steel practice and are carefully cooled to set up desirable structure in the steel.

Only by such exacting care can we be sure of having the quality of steel needed to produce rolled steel wheels that will meet the exacting specifications of AAR.

In Edgewater open-hearth furnaces, advanced metallurgical practices insure the quality of steel needed to meet the exacting requirements of the railroads.



After the ingot shown above has been carefully cooled, it is "sliced" into blocks, which are weighed, inspected and reheated for forging.

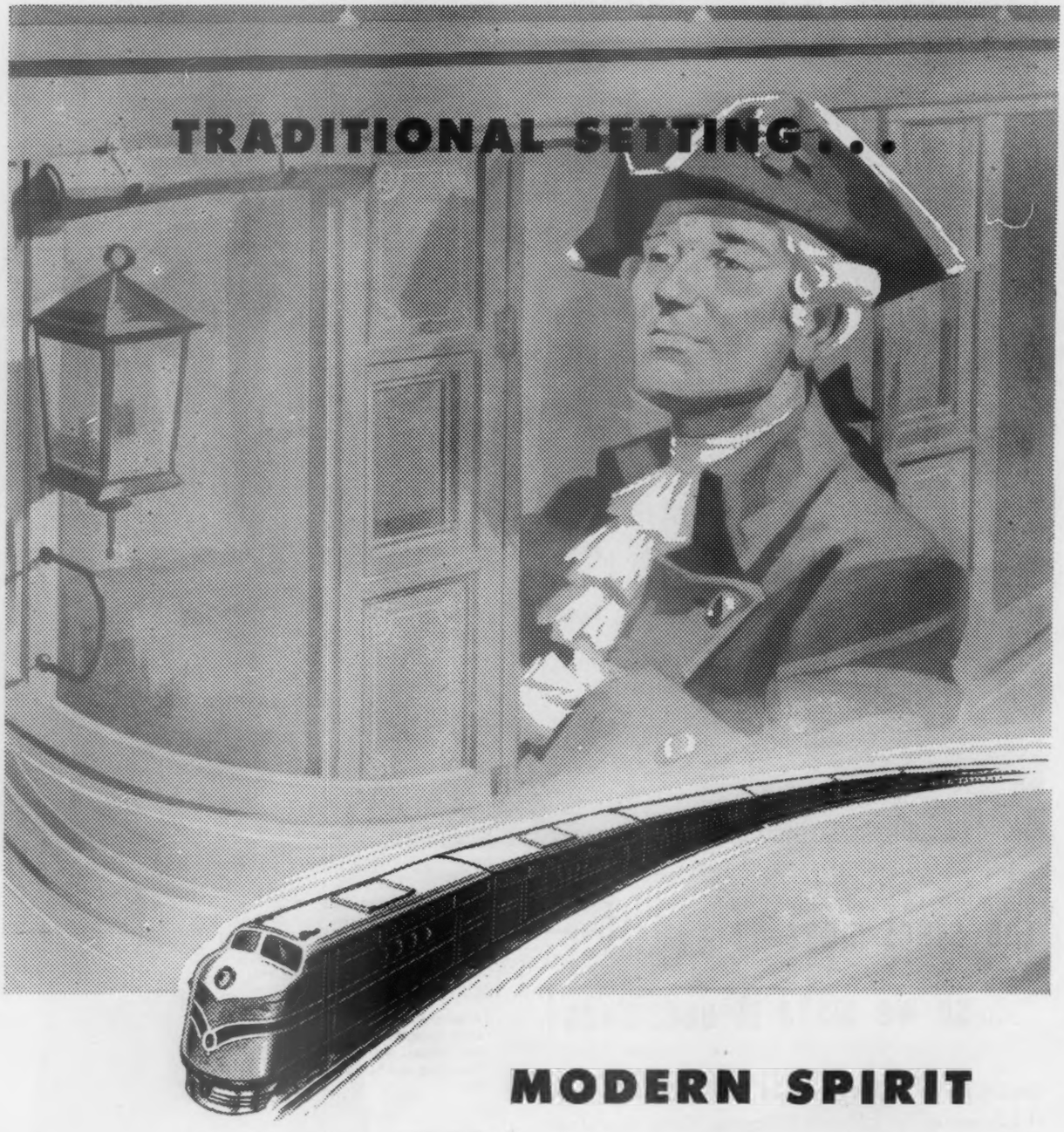
In the forging presses, blocks become blanks, and begin to look like wheels. They then go to the rolling mill, where rim, plate and flange are formed.

After the final rolling operation, the wheels are machined to the dimensions called for by AAR specifications.

**Edgewater Steel Company**

PITTSBURGH, PENNA.

MAKERS OF ROLLED STEEL TIRES, WHEELS and DRAFT GEARS



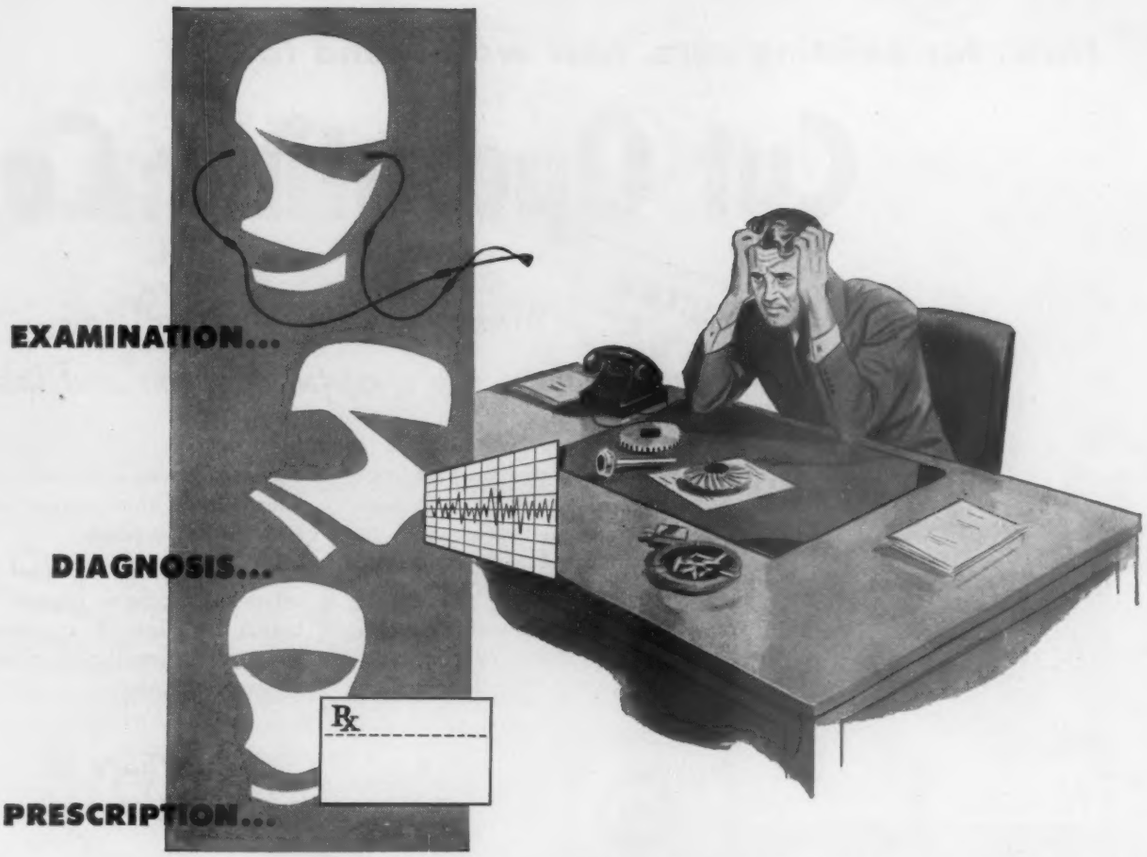

For 169 years The Bank of New York, founded in 1784 by business men *for* business men, has moved steadily ahead with the commercial growth of the nation. Over the years The Bank has developed completely modern facilities through up-to-date application of time-tested knowledge. Today its Commercial Department continues to respond fully to the needs of business. The Bank has customers in each of the 48 states, engaged in hundreds of different branches of commerce and industry—and finances foreign trade throughout the world. The services of our Commercial Department, as well as those of our Trust and Investment Research Departments, are at your disposal, wherever you are, whatever the nature of your business.

# THE BANK OF NEW YORK

*New York's First Bank • Founded 1784*

**Main Office: 48 WALL ST. ☆ Uptown Offices: 530 FIFTH AVE. ☆ MADISON AVE. AT 63rd ☆ MADISON AVE. AT 73rd**

*Member Federal Deposit Insurance Corporation*




## Business "HEADACHES" relieved with Republic

## 3-DIMENSION METALLURGICAL SERVICE

First comes the examination of your steel "headache". . . machinability, or tool life, or heat treatment, or surface finish, or excessive rejects, or any of the problems that you face in production. Here's where you meet the Republic Field Metallurgist.

He discusses the symptoms with the other two members of Republic 3-Dimension Metallurgical Service . . . the Republic Mill Metallurgist and the Republic Laboratory Metallurgist. They look at your symptoms from all three angles . . . the best Republic Alloy Steel to do the job properly, to work efficiently in your plant to keep your costs down.

Then . . . back comes the Republic Field Metallurgist with recommendations that will give you the quality your product requires at the speed you need to show a profit.

Got a steel headache? Tell your Republic Sales Office representative about it . . . he'll have a Republic Field Metallurgist in your plant promptly.

LAB FIELD MILL

3-DIMENSION Metallurgical Service

. . . combines the extensive experience and coordinated abilities of Republic's *Field*, *Mill* and *Laboratory* Metallurgists with the knowledge and skills of your own engineers. It has helped guide users of Alloy Steels in countless industries to the correct steel and its most efficient usage. IT CAN DO THE SAME FOR YOU.

**REPUBLIC STEEL CORPORATION**
*Alloy Steel Division • Massillon, Ohio*
GENERAL OFFICES • CLEVELAND 1, OHIO
Export Department: Chrysler Building, New York 17, N. Y.

REPUBLIC STEEL

*Republic* ALLOY STEELS

***Now, for existing cars, new way found to . . .***

# Cut Operating Costs o

**PROBLEM**

*Many car heating systems, in use today, are wasteful of steam and labor*

It's an unfortunate fact that many car heating systems operating today use a tremendous amount of steam—and are costly to maintain and repair due to equipment duplication.

Proper heat distribution with these systems is nearly impossible to obtain, especially in mild weather. This is caused by steam condensing at the entry point of the finned surface, which creates "heat pile-up" at one radiation point.

Some systems use additional thermostats, valves and piping to improve heat distribution, but this results in even more waste due to higher installation, maintenance and replacements costs.

***But there is a solution . . .***

### How the Railroads Benefit from Competition

Here is further tangible evidence of the benefits now accruing to the nation's railroads since Honeywell entered the railroad car heating field and opened competition for car heating business. These benefits are expressed not only in better ways to do old jobs, but in lower prices achieved thru competitive bidding.

# ts of Car Heating!

ANSWER

*New Honeywell-Controlled Steam System with Multi-Jet Distribution . . .*

**SAVES ON STEAM AND MAINTENANCE**

Recognizing this problem Honeywell, as a supplier, and as a competitive function, developed a new, greatly simplified steam heating system for existing passenger cars. This system provides reliable and economical operation and many of the other advantages of Honeywell's liquid heating system now being installed on many new cars.

This new Honeywell Steam System saves railroads money in these three ways:

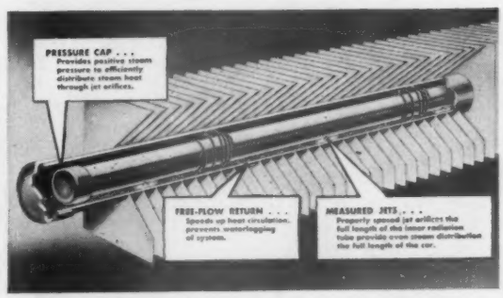
* *less under car piping, therefore less steam waste. In many instances the steam saving has been in excess of 40 per cent over existing steam systems.*
* *less maintenance because fewer valves and less piping are used in the Honeywell system; Multi-Jet steam distribution eliminates unnecessary duplication of equipment.*
* *reduced road failures. Honeywell's dependable electronic control system and steam specialties stand up under tough railway operating conditions.*

"A better way to do an old job"

All these dollar-saving developments are now available. Proud of its position as a supplier to the nation's railroads, Honeywell will remain competitively motivated and will continue to aid management in providing better and more efficient equipment whenever possible.

MINNEAPOLIS **Honeywell**

H HONEYWELL Transportation Division


PRESSURE CAP . . .
Provides positive steam pressure to efficiently distribute steam heat through jet orifices.
FREE-FLOW RETURN . . .
Speeds up heat circulation, prevents waterlogging of system.
MEASURED JETS . . .
Properly spaced jet orifices the full length of the inner radiation tube provide even steam distribution the full length of the car.

**Removes "heat pile-up" — conserves steam**

The drawing shows Honeywell's method of Multi-Jet Steam Distribution. Orifices are positioned in the inner radiation tubes and a *pressure cap* is placed at the end of the steam distribution tube to insure full-length radiation under all heating loads. This prevents "heat pile-up" and creates even heat distribution which greatly improves passenger comfort.

ACT NOW

A Honeywell railroad specialist can show you how this new steam system can be easily installed during normal car shoppings. He'll also tell you how you can take full advantage of the dependable Honeywell Electronic Temperature Controls, which feature Push-Button Inspection and opens the door to even more savings in maintenance. Contact your local Honeywell office today for details!

MINNEAPOLIS-HONEYWELL REGULATOR CO.
Dept. RA-8-181, Minneapolis 8, Minnesota
Gentlemen:
Please send me complete details on the new Honeywell Steam System with Multi-Jet Distribution.

*Name*_____

*Firm Name*_____

*Address*_____

*City*_____ *Zone*____ *State*_____

# watch out for DISPLACED PACKING

How you can take care of Mr. Solid Journal Bearing

## NATIONAL BEARING

4930 MANCHESTER AVE., ST. LOUIS

WRITE FOR THESE FREE BOOKLETS AND POSTERS TO HELP BOX PACKERS, OILERS, AND INSPECTORS DO A BETTER JOB

# NBD *free maintenance aids*

## for higher earnings through better service

**Ask for your better maintenance program consisting of—**

- **POSTERS for your yards**
- **BOOKLETS for your men**

This program is designed to supplement your instructions about servicing journal bearings. Of course, there are instructions on the proper care of solid journal bearings in freight cars. Most of these make pretty dry reading for the men who do the work—the box packers, car oilers and inspectors. So National Bearing has initiated this program to help them do a better job. The program consists of two parts—a series of posters, similar to the one shown on the left hand page. You may have as many as you require for your yards. Upon receipt of your order for posters, the booklet on how to take care of solid journal bearings for the box packers, oilers and inspectors will be submitted for your approval. If you approve it, then ask for the number of copies you need for your men. Both posters and booklets are free.

**Service-proved facts about solid journal bearings:**

**• easiest to maintain • most liberal tolerance • simplicity of design • lowest running friction • lowest cost • lightest weight • standard for interchange**

# DIVISION

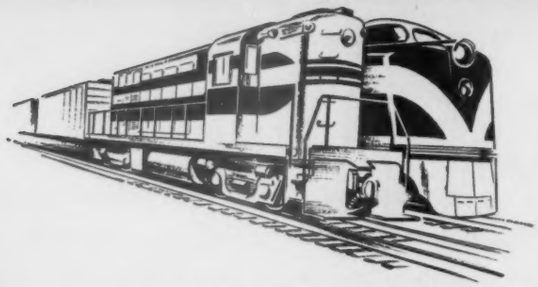
AMERICAN Brake Shoe COMPANY

10, MISSOURI

PLANTS IN: ST. LOUIS, MO., MEADVILLE, PA., NILES, OHIO, PORTSMOUTH, VA., ST. PAUL, MINN., CHICAGO, ILL

# Outstanding benefits of the

# Exide-Ironclad



## for diesel starting

When you specify an Exide-Ironclad Battery, you are assured of:

Quick breakaway and fast acceleration of engine to firing speed . . . high power reserve at all times for operation of control equipment . . . high availability—uninterrupted on-line service . . . low costs of operation, maintenance, depreciation . . . inherent safety . . . clean, quiet, vibrationless operation.

Rugged Exide-Ironclad Batteries are available in interchangeable sizes for diesel-electric locomotives of every make.

Type MV-17-D Exide-Ironclad Battery —284 ampere hours—for cranking switching locomotives of 600 hp and larger.

Type MV-25-D Exide-Ironclad Battery —426 ampere hours—for cranking road locomotives of the larger sizes.

## WHEN IT'S AN EXIDE-IRONCLAD YOUR DIESELS START

YOUR BEST BATTERY BUY AT ANY PRICE

### Here's the Inside Story of the EXIDE-IRONCLAD Battery

Inside . . . where it counts most . . . EXIDE-IRONCLAD is entirely different from any other battery. It's made that way by the exclusive IRONCLAD slotted tube construction . . . a principle that provides direct operating-hour savings for you.

**POSITIVE PLATE SPINES** cast with the heavy top bars, are of SILVIUM, which resists corrosion—contributing to longer battery life.

**SLOTTED TUBES** retain active material in contact with spines, yet permit the electrolyte to penetrate through the active material.

**POLYETHYLENE TUBE SEALER.** This acid-proof plastic sealer fits snugly into the bottom of positive plate tubes, sealing in the active material for a longer working life.

1888 . . . DEPENDABLE BATTERIES FOR 65 YEARS . . . 1953

THE ELECTRIC STORAGE BATTERY CO., Phila. 2 • *Exide Batteries of Canada, Limited, Toronto*

"EXIDE-IRONCLAD" and "SILVIUM" Reg. T.M., U.S. Pat. Off.

**HOMOGENEOUS SEALING COMPOUND** resists shock, without cracking, at high or low temperatures. Forms a permanent seal between container and cover.

**NEW QUARTER-TURN PLASTIC VENT PLUGS.** Made of unbreakable polyethylene. Can be quickly and easily removed to add water.

Exide-Ironclad batteries in a wide variety of types and sizes are also available for car lighting, air conditioning and for battery-electric trucks.

# FROM LOADING TO UNLOADING

*Streamlite*

## HAIRINSUL

## GIVES MAXIMUM PROTECTION

The condition in which a shipment of perishables arrives at market depends to a great extent upon the refrigerator car in which it is shipped. That is where Streamlite Hairinsul comes in.

No matter how extreme or sudden the temperature change, Streamlite Hairinsul, the dependable all-hair insulation, follows through—gives maximum protection to vital shipments of perishables under all conditions.

Because all-hair insulation is the most efficient, most economical for refrigerator cars, major car builders have been specifying it for nearly half a century.

At right are still more reasons why leading car builders demand Streamlite Hairinsul. Complete data will be sent on request.

**LOW CONDUCTIVITY.** Thoroughly washed and sterilized, all-hair heat barrier. Rated conductivity — .25 btu per square foot, per hour, per degree F., per inch thick.

**LIGHT WEIGHT.** Advanced processing methods reduce weight of STREAMLITE HAIRINSUL by 40%.

**PERMANENT.** Does not disintegrate when wet, resists absorption. Will not shake down, is fire-resistant and odorless.

**EASY TO INSTALL.** Blankets may be applied to car wall in one piece, from sill to plate and from one side door to the other. Self-supporting in wall sections between fasteners.

**COMPLETE RANGE.** STREAMLITE HAIRINSUL is available ½" to 4" thick, up to 127" wide. Stitched on 5" or 10" centers between two layers of reinforced asphalt laminated paper. Other weights and facings are available.

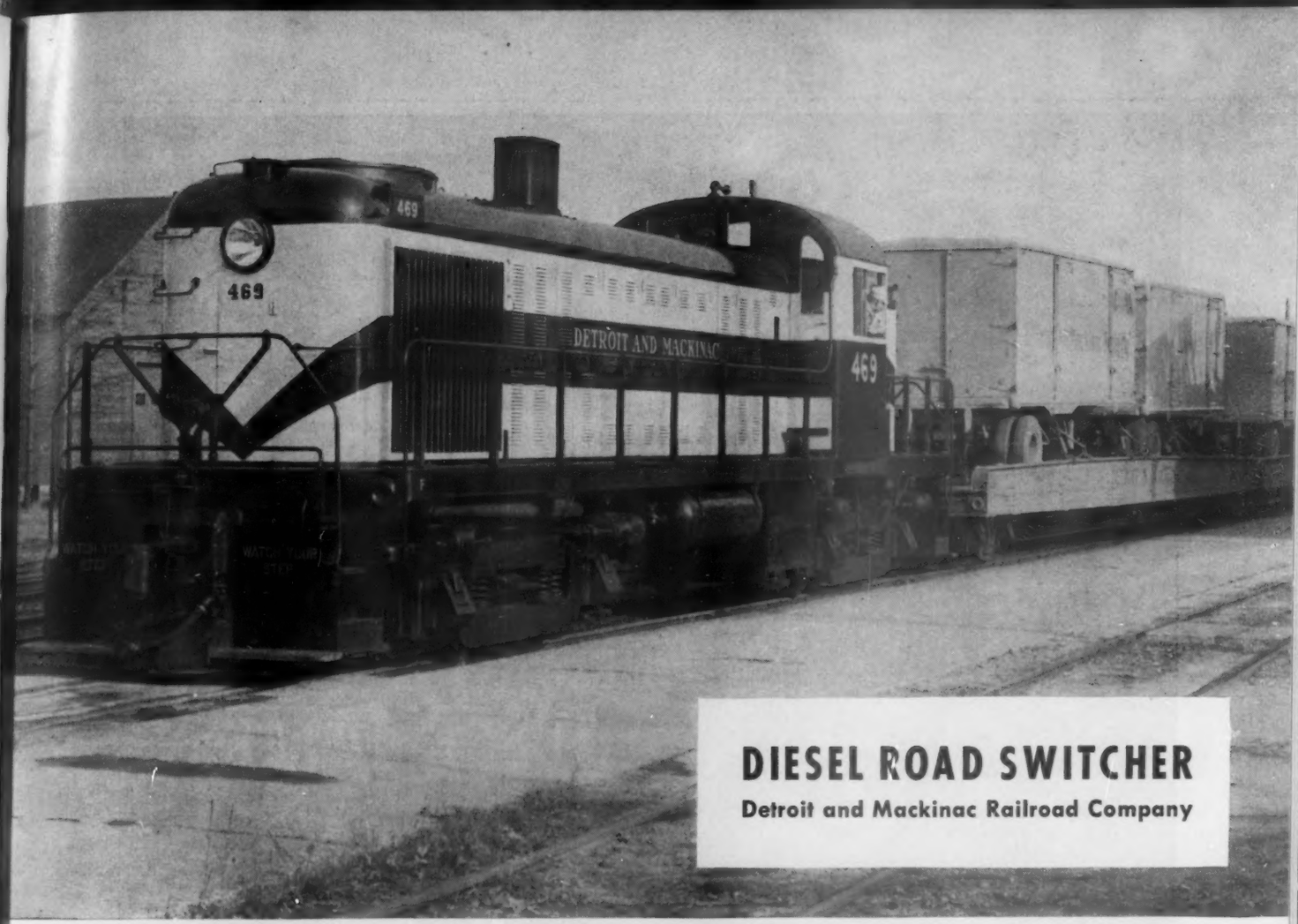
**HIGH SALVAGE VALUE.** The all-hair content does not deteriorate with age; therefore has high salvage value. No other type of insulation offers a comparable saving.

**Sets The Standard By Which All Other Refrigerator Car Insulations Are Judged**

*Streamlite* **HAIRINSUL**

AMERICAN HAIR & FELT CO.

DEPT. H38, MERCHANDISE MART, CHICAGO 54, ILL.




**DIESEL ROAD SWITCHER**
**Detroit and Mackinac Railroad Company**

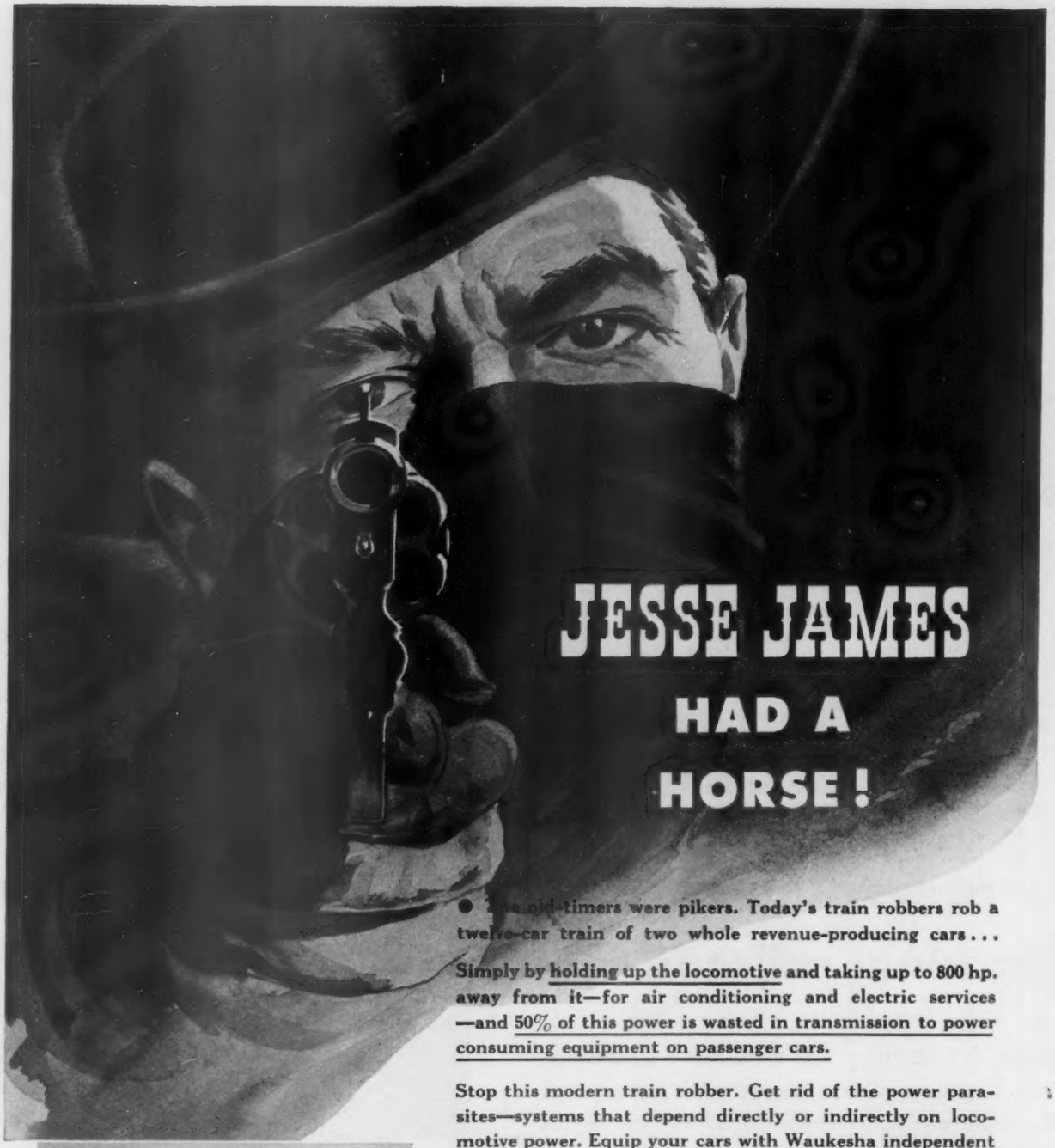
# Hard-working road switchers on the Detroit and Mackinac railroad use...

**STANDARD HD**
TRADE MARK
**Oil**

● Alco-G.E. 1500 h.p. road switchers keep tonnage freights rolling on schedule over the Detroit and Mackinac railroad in northeastern Michigan. In this tough service, STANDARD HD Oil has supplied effective lubrication for these units. Used for over five years, it has given ample evidence of its ability to help keep maintenance costs low and availability high.

STANDARD HD is now used by over 70 railroads for all types of diesel service. Make this acceptance your basis for investigating the benefits offered by this superior heavy-duty lubricant. A Standard Oil Railway Department representative, through his extensive experience, can help you obtain more effective lubrication. For his services, write Standard Oil Company (Indiana), 910 South Michigan Avenue, Chicago 80, Illinois.

**STANDARD OIL COMPANY** STANDARD *(Indiana)*



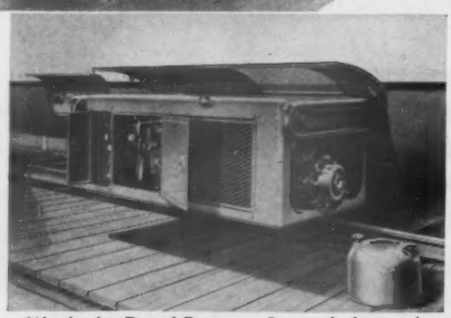

● Those old-timers were pikers. Today's train robbers rob a twelve-car train of two whole revenue-producing cars . . .

Simply by holding up the locomotive and taking up to 800 hp. away from it—for air conditioning and electric services —and 50% of this power is wasted in transmission to power consuming equipment on passenger cars.

Stop this modern train robber. Get rid of the power parasites—systems that depend directly or indirectly on locomotive power. Equip your cars with Waukesha independent engine-driven air conditioning units and electric generating units.

There's no parasite load—all the locomotive's horsepower is available to pull the train. Waukesha engine-driven units completely take over—supply all the power for modern air conditioning, emergency heating, and all other electric services on demand, independent of locomotive, train movement, car location and standby service.

Get all the facts about Waukesha Diesel and Propane Engine-Driven Units. Send for bulletins.



Waukesha Diesel Enginator® on tubular track extension, withdrawn for general inspection

218

RAILWAY DIVISION • **WAUKESHA MOTOR COMPANY** • WAUKESHA, WISCONSIN
Largest Builders of mobile, engine-driven Refrigeration and Generator Equipment

# EXTRA CAPACITY
## For Passenger Comfort-
# THANKS TO BATTERY POWER!

It takes a lot more ampere hours to keep passengers happy today than it did ten years ago. You can be sure of the extra capacity you need with Gould Air Conditioning and Car Lighting Batteries. Gould has kept pace with the times—gives you batteries with extra reserve you can depend on to supply all the power you need for complete passenger comfort.

Specify
GOULD KATHANODE
BATTERIES
for Air Conditioning and
Car Lighting

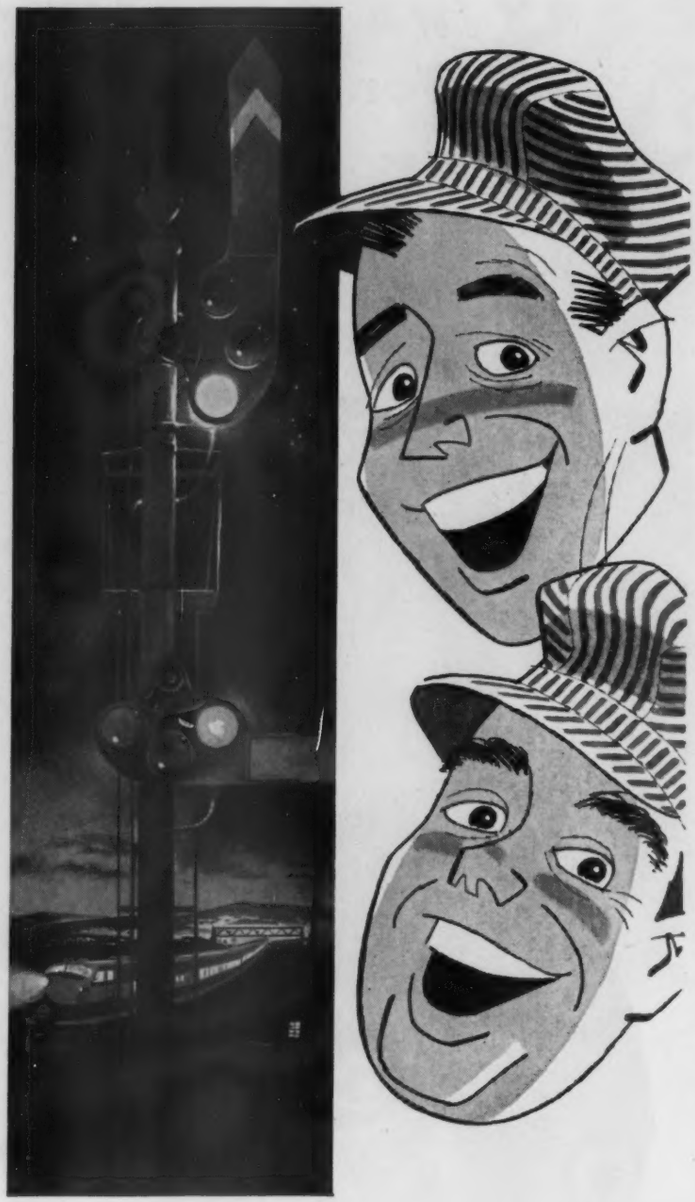
# GOULD *RAILROAD BATTERIES*

GOULD-NATIONAL BATTERIES, INC., TRENTON 7, N. J.

*Always Use Gould-National Automobile and Truck Batteries*

©1953 Gould-National Batteries, Inc.

# They've given us the highball!



Have you noticed that an ever increasing number of railroads have their motive power equipped with Bendix* fuel injection?

This growing acceptance is based on sound reason, for Bendix fuel injection equipment has proved itself completely dependable under every railroad operating condition.

Bendix engineers are known as experts in diesel design, and Bendix manufacturing facilities are unparalleled in the industry.

The result is fuel injection equipment that is economical in operation, efficient in performance and built for long service.

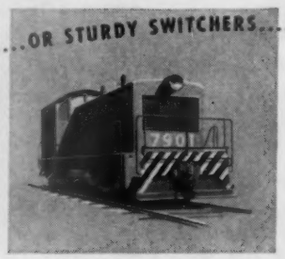
On passenger flyers, mighty freights or yard switchers—in fact, wherever trains roll—Bendix fuel injection equipment is at work helping to maintain schedules and cutting costs.

Yes, the railroads of America have really "given Bendix the highball" when it comes to fuel injection equipment.

*REG. U. S. PAT. OFF.

**SCINTILLA MAGNETO DIVISION OF Bendix AVIATION CORPORATION • SIDNEY, NEW YORK**

Western Office: 582 Market Street, San Francisco, Calif.
Export Sales: Bendix International Division, 205 East 42nd Street, New York 17, N. Y.



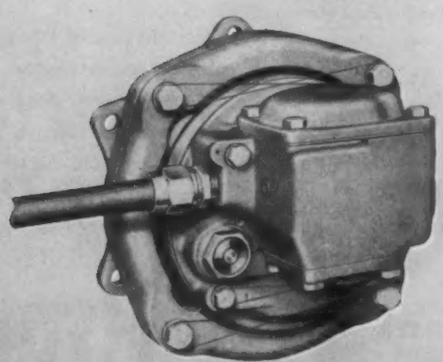

YOU CAN DEPEND ON

# BENDIX

## FUEL INJECTION EQUIPMENT

## Reduce the need for wheel turning with this reliable anti-wheel-slip device

*the Westinghouse AP Mechanical Pneumatic Decelostat® Controller for passenger cars*



Westinghouse Air Brake
COMPANY
AIR BRAKE DIVISION WILMERDING, PA.

# RAILROAD RADIO SIGNAL NOT AFFECTED BY 2000 FOOT-POUND SHOCK TEST

## One More Westinghouse Test Assures Equipment "Proved for Availability"

Here's just one way in which Westinghouse FE Railroad Radio is pretested for its ability to take rigorous in-service punishment, to resist severe coupling shocks.

At the Westinghouse Engineering Laboratory, East Pittsburgh, Pa., Type FE equipment, in continuously monitored operation, receives repeated blows from a 400 pound hammer. Impacts of 400 to 2000 foot-pound force are delivered to the sides, rear and top of the mounting plate. Average acceleration, shown by high-speed motion pictures, ranges from 30 to more than 300 G's!

Yet, Westinghouse Railroad Radio emerges without damage—without service interruption—even from shocks that far exceed anything encountered in actual service. Reasons: the clean, engineered design of Type FE equipment . . . the careful placement of tested components within the aluminum chassis . . . valuable experience gained in over 60 years of servicing railroad needs.

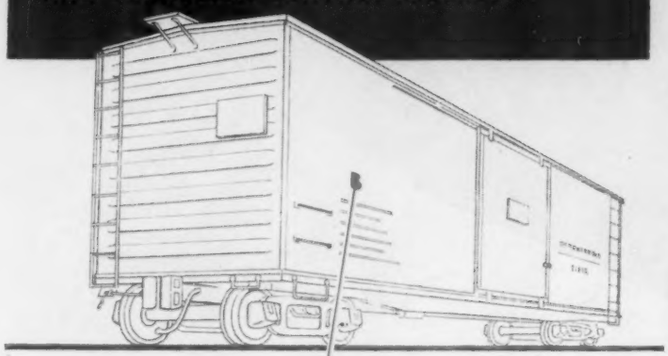
Every element of Westinghouse Railroad Radio emphasizes dependability and highest availability in communications for your road. Write for full information to: Westinghouse Electric Corporation, Electronics Division, Communications Section, 2519 Wilkens Avenue, Baltimore 3, Maryland, or call your Westinghouse representative today.

YOU CAN BE SURE...IF IT'S **Westinghouse**

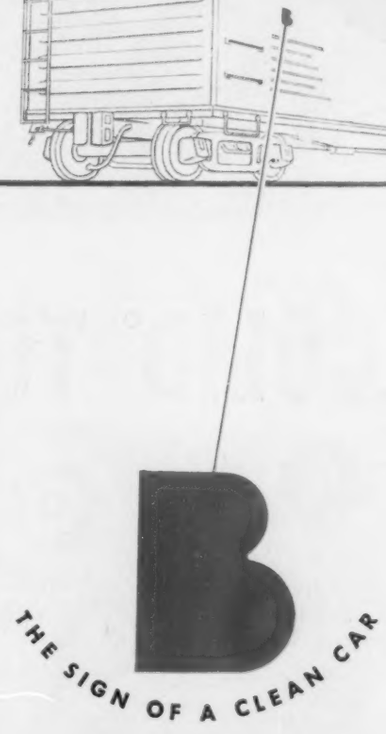
J-02269

# Did you know...that 10,000 box cars are now Fiberglas-protected against infestation and corrosion by the Bishop System?

**RAILROADS USING FIBERGLAS INFESTATION AND CORROSION CONTROL INCLUDE:**



ATCHISON, TOPEKA & SANTA FE RY. CO.
BALTIMORE & OHIO R. R.
BUFFALO CREEK R. R.
CHICAGO, BURLINGTON & QUINCY R. R.
CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC R. R.
CHICAGO & NORTH WESTERN RY.
CHICAGO, ROCK ISLAND & PACIFIC R. R. CO.
ERIE R. R. CO.
GREAT NORTHERN RY. CO.
LEHIGH VALLEY R. R. CO.
MISSOURI PACIFIC LINES
NEW YORK CENTRAL SYSTEM
NORTHERN PACIFIC RY. CO.
PENNSYLVANIA RAILROAD
ST. LOUIS-SAN FRANCISCO RY. CO.
SOO LINE
SOUTHERN PACIFIC LINES
WABASH R. R. CO.




For full information on the Bishop System, contact your nearby Owens-Corning branch office for a copy of Booklet RR1.A1. Or write Owens-Corning Fiberglas Corporation, Department 21-H, Toledo 1, Ohio.

SMALL INVESTMENT CAN SAVE THOUSANDS! Railroads have been quick to recognize the economic soundness of Fiberglas* Infestation and Corrosion Control. Material costs only about $15 to fill space behind liners in both ends of a box car . . . or around $90 for the whole car. Yet potential savings to the railroad are many times this small investment.

THREE IMPORTANT SAVINGS . . . First, you get lasting protection against infestation, and resulting damage claims, because the special white Fiberglas wool completely fills the space behind liners. No dirt or lading can accumulate to attract and feed insects or vermin. Second, you avoid car corrosion from damp accumulations behind liners. Third, you have a clean car that needs only a sweep-out to be *kept* clean . . . no expensive blowing!

The above investment may be capitalized on both new and rebuilt cars. Remember, clean cars mean better service . . . fewer claims!

OWENS-CORNING FIBERGLAS **RAILROAD PRODUCTS**

*Fiberglas is the trade-mark (Reg. U.S. Pat.Off.) of Owens-Corning Fiberglas Corporation for a variety of products made of or with fibers of glass.

# There's a "DEEP-FLANGE" ALCOLID® TOO

## *for lifetime service*

Railroads with extensive right-of-way through desert country, or where extreme winter conditions prevail, recognize the "Deep-Flange" ALCOLID as the answer to their journal box lid problems.

Like the regular ALCOLID, the "Deep-Flange" model is designed for a lifetime of service. The fully articulated cover is held firmly in place by a sturdy torsional spring. The square-headed retaining pin is locked in place by a flanged hood ear. Thus, there is *no pin rotation or eye elongation.* Installation is quick and easy.

Send for complete details on the "Deep-Flange" ALCOLID to your Alco sales representative in New York, Richmond, Cleveland, Chicago, St. Louis, St. Paul, San Francisco.

**ALCOLID**

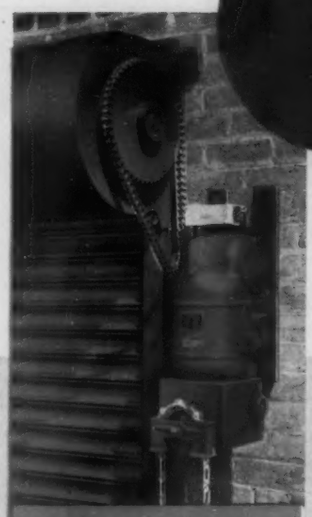
PATENTED

**RAILWAY STEEL-SPRING DIVISION**

AMERICAN LOCOMOTIVE COMPANY

# Rolling Steel DOORS

MAHON CHAIN-GEAR OPERATOR



MAHON STANDARD POWER OPERATOR 920-P

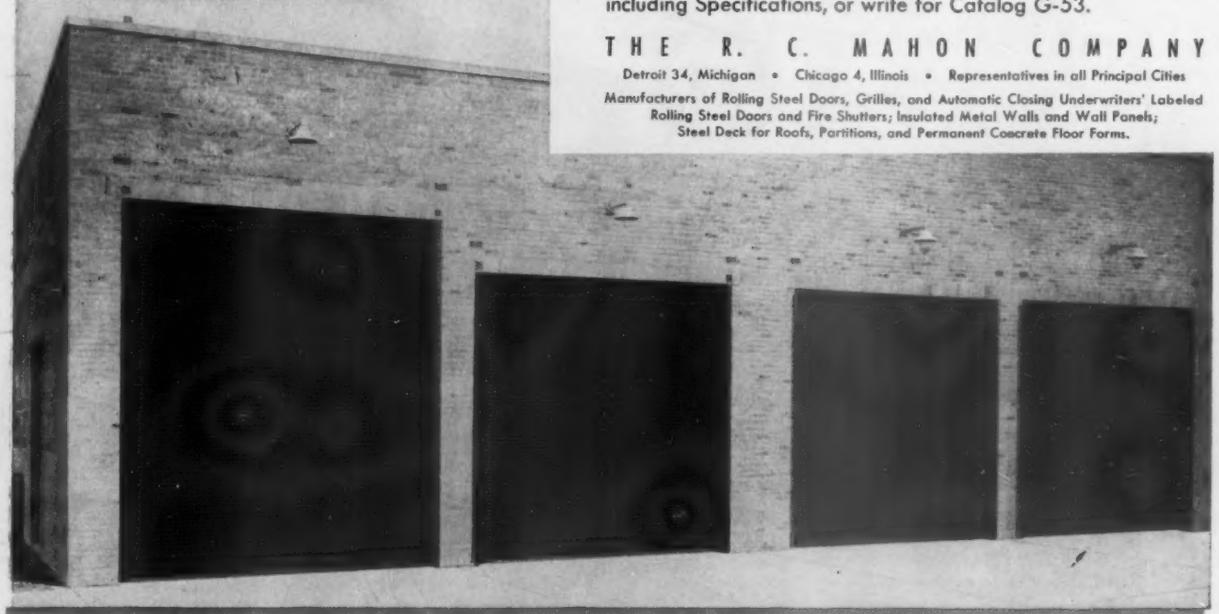
*Manually, Mechanically, or Power Operated*

A good, quick opening, quick closing power operated rolling steel door meets present-day requirements more fully than any other type of door. The vertical action of its roll-up steel curtain requires no usable space either inside or outside the opening . . . there are no overhead tracks or other obstruction to interfere with crane operations or limit headroom adjacent to the door opening. No other type of door offers these inherent advantages of space economy and compactness in operation . . . in addition, rolling steel doors are permanent—their all-metal construction assures you a lifetime of trouble-free service, and provides maximum security against intrusion and fire. When you select a rolling steel door, check specifications carefully . . . you will find many extra-value features in Mahon doors—for instance, the galvanized steel material, from which the interlocking curtain slats are rolled, is chemically cleaned, phosphated, and treated with a chromic acid solution to provide paint bond, and, the protective coating of synthetic enamel is baked on at 350° F. prior to roll-forming. You will find other material and design features in Mahon doors that add up to a greater overall dollar value. See Sweet's Files for complete information including Specifications, or write for Catalog G-53.

**THE R. C. MAHON COMPANY**

Detroit 34, Michigan • Chicago 4, Illinois • Representatives in all Principal Cities

Manufacturers of Rolling Steel Doors, Grilles, and Automatic Closing Underwriters' Labeled Rolling Steel Doors and Fire Shutters; Insulated Metal Walls and Wall Panels; Steel Deck for Roofs, Partitions, and Permanent Concrete Floor Forms.



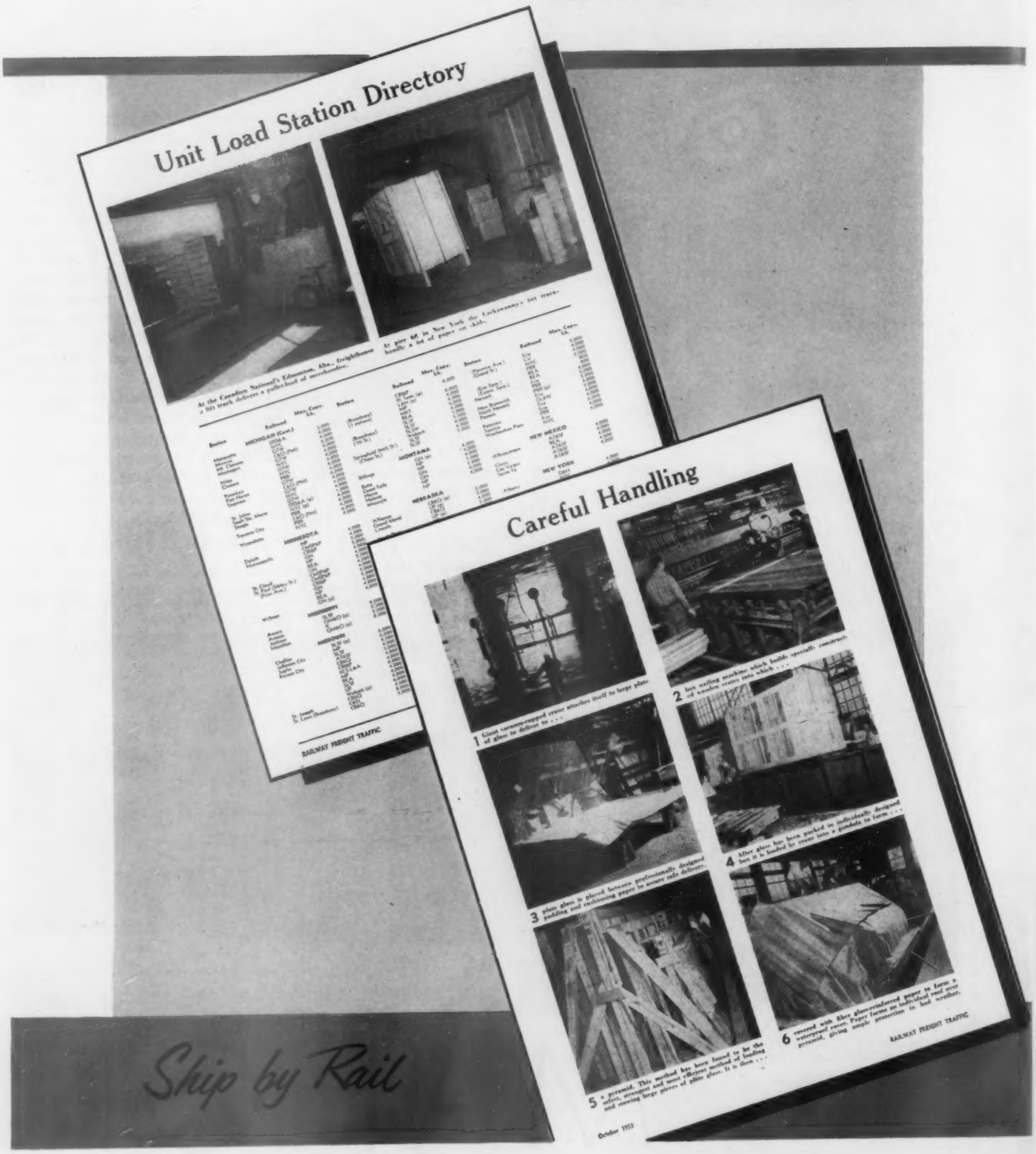
ROLLING STEEL DOORS, SHUTTERS AND GRILLES TO MEET EVERY REQUIREMENT

Four Mahon Power Operated Rolling Steel Doors installed in truck openings of an enclosed loading dock at Detroit Hardware Company's new plant.

# MAHON

# *Special October Number of...*

# RAILWAY



# FREIGHT TRAFFIC

- Report of A.A.R. Careful Freight Handling Campaign
- Directory of Railway Freight Stations Handling Unit Loads

*Featuring*

1. A complete Freight Station Directory Section containing geographical listings of all freight stations (including transfers and piers) in each state equipped to handle unit loads, completely brought up-to-date since its appearance last year.
2. A comprehensive illustrated report based on the "Careful Freight Handling" campaign being waged by the Freight Loss and Damage Prevention Committee of the A.A.R.
3. A Materials Handling Equipment feature illustrating and describing various types of equipment in use by railroads at freight stations, terminals, etc.

The Freight Station Directory Section of the October issue of RAILWAY FREIGHT TRAFFIC is an annual service previously rendered to readers by the *Freight Traffic Issues* of RAILWAY AGE. The illustrated report is specifically timed to tie-in with the railways' "Careful Handling Month," an A.A.R. Freight Loss and Damage Committee campaign.

All of these features, along with the regular monthly departments, including a materials handling equipment feature "Time and Budget Savers," and articles on wire bound shipping boxes, Freight Loss and Damage Section seminar, and railroad careful handling promotion, go together to make the October RAILWAY FREIGHT TRAFFIC one of the greatest issues ever; don't miss it!

*Remember*—The *final* closing date is Thursday, September 10, 1953

RAILWAY **Freight Traffic**

A Simmons-Boardman Publication
30 Church Street
New York 7, New York

# HERE'S PROOF

## *you can SEE of effective Oakite cleaning on*

## DIESEL CYLINDER LINERS

LOOK closely at this cylinder liner. The right half of it was cleaned with an Oakite material specially designed for the fast removal of carbonized oil and other tenacious deposits. In the photograph you can SEE the effectiveness of Oakite cleaning . . . the better job your road can expect to obtain when cleaning liners, pistons and other Diesel engine parts with Oakite materials and that enable you to handle this work easily, economically. We will be glad to demonstrate, in your own Diesel shop . . . or send you more details on request.

**OAKITE PRODUCTS, INC.,**
**46 Rector Street, NEW YORK 6, N. Y.**
*Technical Representatives Located in Principal Cities of United States and Canada*

**OAKITE RAILWAY DIVISION**

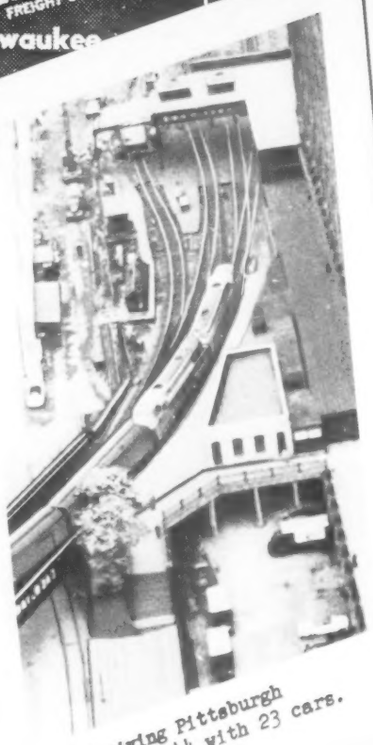
WHAT'S THE ATTRACTION?

# IT'S THE NEW FAIRBANKS-MORS

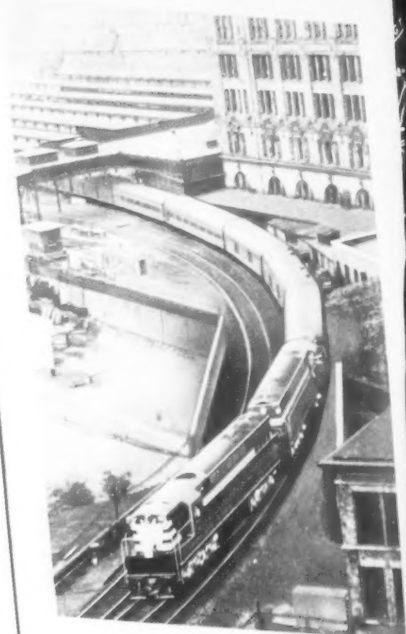
## ... DEMONSTRATING MOTI

Round Trip to Pittsburgh

First call for Train Master performance on the Pennsylvania was a round trip passenger run between Chicago and Pittsburgh. Trains 44 and 99 gave the Train Master the opportunity to show what 4800 horse-power and Opposed-Piston acceleration mean in making time between stops.



Arriving Pittsburgh on train 44 with 23 cars.



Returning Chicago on train 99 with 23 cars.

## FIRST ... IN PASSENGER SERVICE

## ON THE PENNSYLVANIA

# TRAIN MASTER

# POWER VERSATILITY

# IN FREIGHT

# SERVICE

4167 tons on CH-1 on its way to Chicago behind TM-1 & TM-2.

CP-8 Arriving Crestline with 5867 ton from Chicago

PF-7 ... behind, a 4.5 mile grade. Ahead, important meet in Chicago

Faster runs with greater tonnages. That's one of the basic advantages offered by the Train Master. Every railroad on the Demonstration wants to see that performance applied to their particular grades, tonnages and schedules. At this writing, TM-1 & TM-2 have proved their ability in this service on more than 3,000 miles of rigid test.

# versatility

PASSENGER

FAST FREIGHT

YARD SERVICE

EXTRA SERVICE

2400 horsepower, six traction motors. Total weight of 375,000 pounds—all on drivers. 4500 lb/hr capacity steam generator. These are the Train Master features that equip it ideally for every major motive power assignment on your road. And TM ability to switch overnight from one assignment to another provides the unique opportunity to gain greater operating efficiency in all classes of service.

**FAIRBANKS-MORSE**

*a name worth remembering when you want the best*

DIESEL LOCOMOTIVES AND ENGINES • RAIL CARS AND RAILROAD EQUIPMENT • ELECTRICAL MACHINERY • PUMPS • SCALES • WATER SERVICE EQUIPMENT • HAMMER MILLS • MAGNETOS

THE FAIRBANKS-MORSE

# TRAIN MASTER

***the most useful locomotive ever built***

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*he best*

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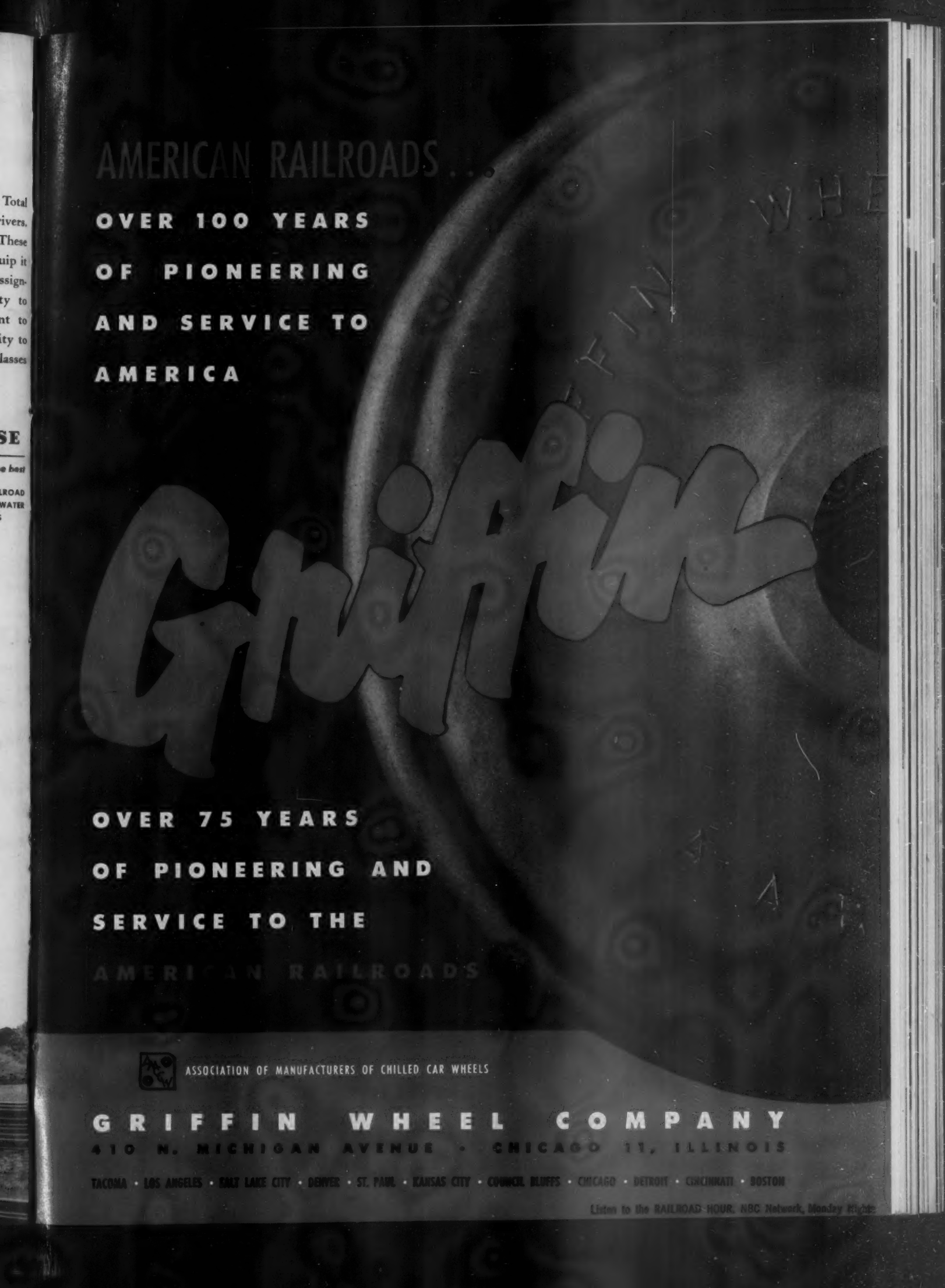
CARS AND RAILROAD
MPS • SCALES • WATER
LS • MAGNETOS

built


AMERICAN RAILROADS . . .
OVER 100 YEARS
OF PIONEERING
AND SERVICE TO
AMERICA
Griffin
OVER 75 YEARS
OF PIONEERING AND
SERVICE TO THE
ASSOCIATION OF MANUFACTURERS OF CHILLED CAR WHEELS
GRIFFIN WHEEL COMPANY
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Listen to the RAILROAD HOUR, NBC Network, Monday Nights

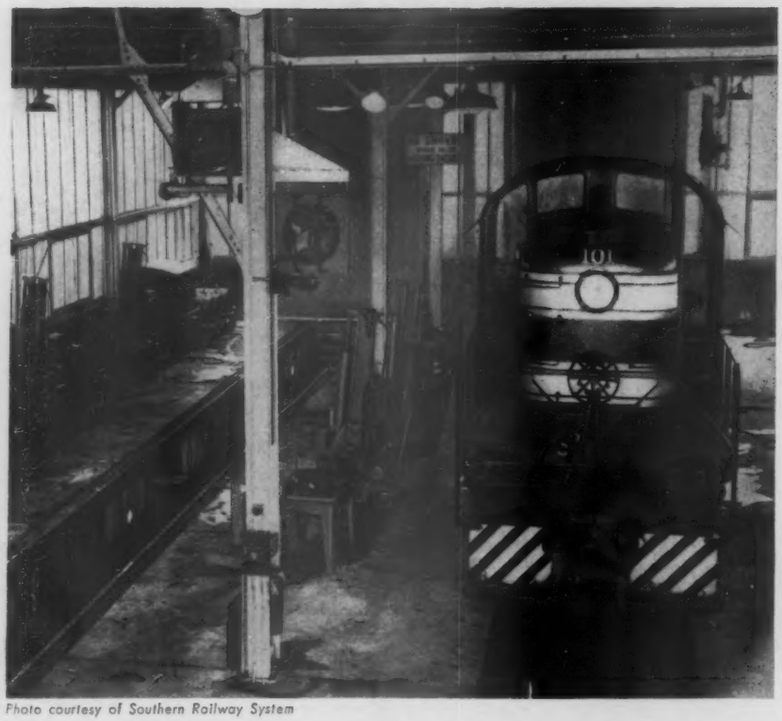


*Photo courtesy of Southern Railway System*

# Repair shop electrical needs ...via GRAYBAR

OF COURSE, you'll find it profitable to get *all* of your electrical needs from Graybar. A single source for everything electrical can't help but be an important time-saver . . . it eliminates the delay and inconvenience of piecemeal inquiries and duplicate orders.

Through a nation-wide warehouse system, Graybar distributes the products of nearly 300 of the nation's leading manufacturers—a total of over 100,000 items covering practically everything electrical needed by your shops. Here are just a few of the items — all first-quality—you can get on a single order from Graybar

**POWER APPARATUS**—G-E motors, controls, panelboards, fuses.

**LIGHTING EQUIPMENT**—fluorescent, incandescent, and mercury fixtures—plus lamps—for shops, yards and offices.

**TOOLS**—saws, screwdrivers, nibblers, hammers, soldering irons—hand tools and power-operated tools of all kinds.

**EVERYDAY SUPPLIES**—wire, cable, connectors, lugs, tape, conduit, fittings.

Graybar service to railroads also includes the help of specialists in the selection, procurement, and application of pole-line supplies and communication equipment.

Your near-by Graybar Representative stands ready to give you up-to-the-minute information on prices and local delivery conditions to help you plan ahead for "on schedule" deliveries. Please see the *Pocket List* for the address of our nearest office. *Graybar Electric Company, Inc. Executive Offices: Graybar Bldg., New York 17, N.Y.*

361-208

***100,000 electrical items are distributed THROUGHOUT THE NATION . . .***

*via* GraybaR

**OFFICES AND WAREHOUSES IN OVER 100 PRINCIPAL CITIES**

## Current Publications

### PAMPHLETS

**MEASURING EQUIPMENT FOR LABORATORY AND PRODUCTION TESTING. 64 pages, illustrations. General Electric Company, Schenectady 5, N.Y. Free.**

This is a revised edition of the General Electric Company's measuring equipment catalog, containing data on more than 115 testing and measuring devices. The publication, designated GEC-1016A, has information on products ranging from simple current indicators to completely automatic oscillographs; from surface roughness scales to mass spectrometers; and from d.c. amplifiers to radiation monitors.

The catalog is designed to bring to the attention of its users the many measuring devices that can be used to increase efficiency of their operations. A brief description of each product and its field of application, and condensed tables of important characteristics and prices, indicate whether or not the device is suited for a specific job. Reference to more complete bulletins on each type of equipment also is included.

•

**THE BUDD COMPANY. 32 pages, illustrations. Budd Company, Philadelphia 32, Pa. Free.**

Budd supplies essential products and services to three basic industries — automobile manufacturers and railroads, both in the United States and abroad, and agriculture. In addition, it manufactures military equipment for the U.S. government. This handsome brochure attractively presents an overall view of the entire Budd organization so its stockholders, customers, suppliers and employees may become aware of its broad range of activities.

•

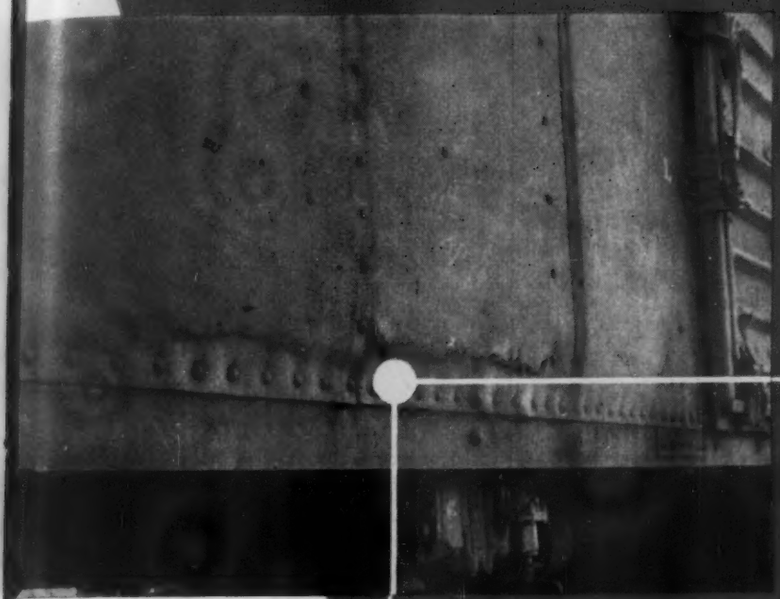
**BATTELLE RESEARCH IN ENERGY AND FUELS. 24 pages, illustrations. Battelle Memorial Institute, 505 King ave., Columbus 1, Ohio. Free.**

In this booklet are described some of the research studies pertaining to fuels and energy that Battelle has conducted for industry and the government. Here also is outlined the Battelle plan, and how it can be used by companies concerned directly or indirectly with production and use of fuels or conversion and utilization of energy. Battelle is a not-for-profit endowed foundation, which conducts research for companies, associations, and governmental bodies. The organization contracting for the research pays the cost of the work, including its proportionate share of overhead expense, and owns exclusive rights to all results. Arrangements are confidential, and no projects are accepted that conflict with prior commitments.

•

**THE ENTERING WEDGE. 17 pages. Association of American Railroads, Transportation bldg., Washington 6, D.C. Free.**

Subtitled "Why American participation in the proposed Canadian St. Law-



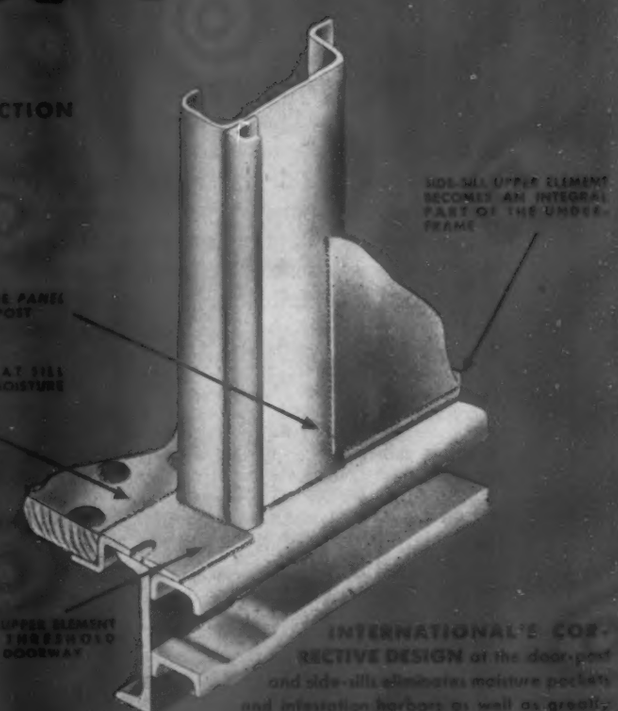
# high speeds and rough handling didn't cause this!

INADEQUATE DESIGN AND OUT-DATED CONSTRUCTION DOOMED THIS CAR!

# International

THERE'S A NEW PRECISION IN FREIGHT CAR CONSTRUCTION

IT COSTS LESS TO ASSEMBLE A NEW CAR THAN TO REBUILD AN OLD ONE . . . and to continuously repair and "re-patch" on the basis of old design merely ***perpetuates*** expense! ***International's*** **CORRECTIVE DESIGN** illustrated at the right demonstrates "the new precision in freight car construction" in just a small section of the ***overall redesign*** of freight car sides, doors, underframes and other components instituted at ***International Steel!***


SIDE-SILL UPPER ELEMENT BECOMES AN INTEGRAL PART OF THE UNDER-FRAME
DOUBLE-FLANGE PANEL WELDED DOOR-POST
FLOOR LEVEL AT SILL HEIGHT KEEPS MOISTURE FROM SIDES
SIDE-SILL UPPER ELEMENT FORMS THRESHOLD PLATE IN DOORWAY

INTERNATIONAL'S CORRECTIVE DESIGN of the door-post and side-sills eliminates moisture pockets and infestation harbors as well as greatly increasing structural strength.

**INTERNATIONAL STEEL COMPANY** RAILWAY DIVISION
EVANSVILLE 7, INDIANA

**LORD MOUNTINGS PROTECT INSTRUMENTS *and* ELECTRONIC EQUIPMENT *from* VIBRATION *and* SHOCK DAMAGE • • •**

VIBRATION and shock are natural enemies—of electronic equipment and precision instruments . . . To control the damage which these enemies can do, Lord Vibration Control Mountings and Bonded Rubber Parts are used to very profitable advantage. More than a quarter century's experience in dealing with vibration and shock is yours when you take advantage of Lord engineering assistance. The result of such consultation is full protection for electronic units and sensitive instruments by correctly designed and precisely manufactured Lord Mountings and Bonded-Rubber parts.

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**LORD MANUFACTURING COMPANY • ERIE, PA.**

LORD BONDED RUBBER *Headquarters for* **VIBRATION CONTROL**


rence waterway is unnecessary—and would lead to vastly greater future expenditures by United States taxpayers," this booklet answers the principal arguments advanced for passage of Senate Bill 589, which undertakes to commit the U.S. to participation in building the waterway.

•

**FOUR WHISTLES TO WOOD UP!, by Frank N. Walker. 64 pages, illustrations. Book Circulation, Upper Canada Railway Society, Inc., Postal Box 122, Terminal "A," Toronto, Ont. 50 cents.**

Issued on the occasion of the 100th anniversary of the running of the first steam passenger train in Canada West (Ontario), May 16, 1853, this little booklet contains 12 stories about the Northern Railway of Canada, now part of the Canadian National. The booklet gets its title from the old-fashioned signal system that "on the sound of four blasts, employees of the road at outlying stations jumped to their feet because they knew [the engine] was going to 'wood-up.'"

•

**HANDBOOK OF ACCIDENT PREVENTION FOR BUSINESS AND INDUSTRY. 94 pages, illustrations. Prices on application to National Safety Council, 425 North Michigan ave., Chicago 11.**

A convenient safety guide for department supervisors or for managements of smaller roads which cannot afford a full-time safety specialist.

•

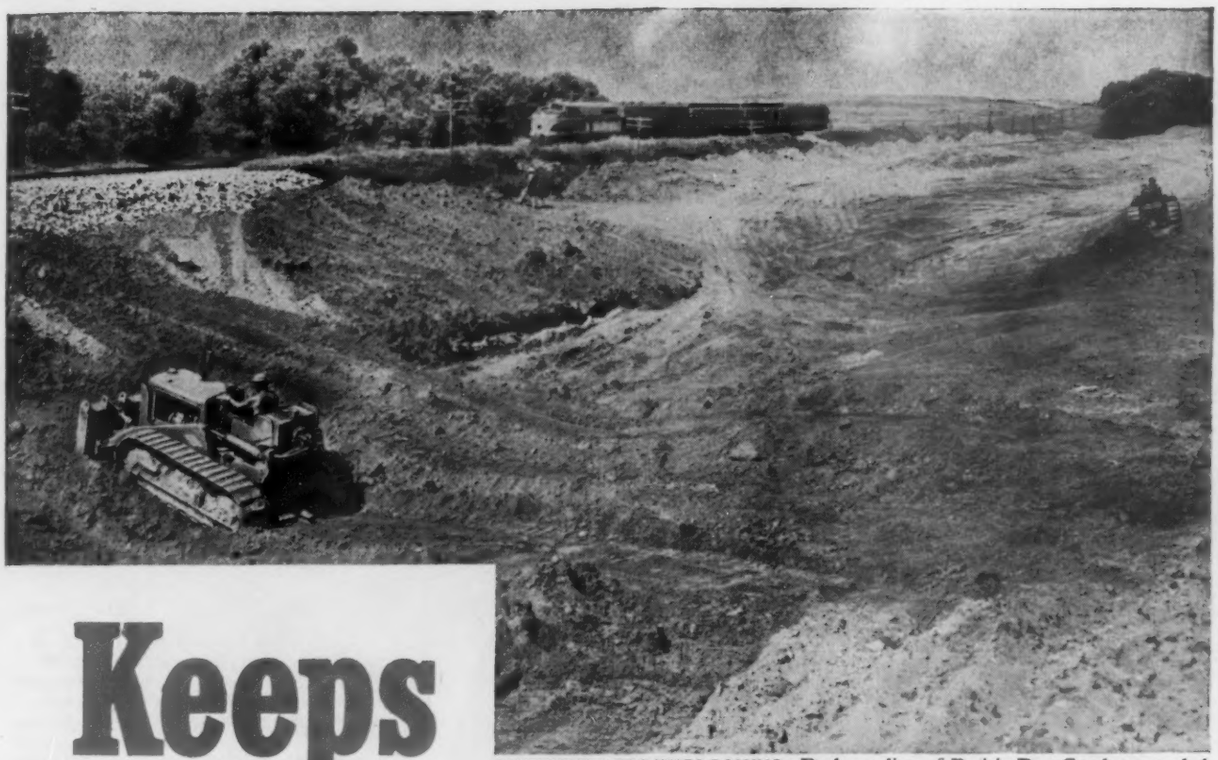
**EARLESTOWN WORKS, CARRIAGE AND WAGON ENGINEER'S DEPARTMENT. 1853-1953. 16 pages. British Railways, London Midland region, Public Relations and Publicity Officer, Euston House, London, N.W. 1, England.**

One hundred years ago, on March 1, 1853, the London & North Western Railway leased from Messrs. Jones & Potts a small works known as the Viaduct Foundry, so named from its proximity to Stephenson's famous viaduct over St. Helens canal on the one-time Liverpool & Manchester Railway. Seven years later, on May 11, 1860, the LNWR purchased the property outright for £15,000. This commemorative booklet outlines the history of the works and its development under railway ownership in the intervening hundred years, when it was successively owned by the LNWR from 1853 to 1923; by the London, Midland & Scottish from 1923 to 1947, and by the Railway Executive of the British Transport Commission from January 1, 1948, to the present date.

•

**THE USE OF WELLINGTON FUND IN RETIREMENT PLANS. 18 pages. Wellington Company, 1630 Locust st., Philadelphia 3, Pa. Free.**

This booklet is designed to assist employers interested in setting up profit sharing retirement plans. It contains a description of essential requirements for such plans and outlines the procedure for qualifying them with the



**REVENUE TRAFFIC KEEPS ROLLING.** Rechanneling of Prairie Dog Creek proceeded without interrupting railroad schedules as Contractor Poppe's two International crawlers teamed up to excavate 845 cubic yards of sand daily for the new creek bed.

# Keeps Creek from Main Line

## International Crawlers move Prairie Dog Creek 200 feet from Rock Island's main line in 13 days

When rip-rap failed to keep Prairie Dog Creek from eating into the Rock Island roadbed one mile west of Jennings, Kansas, the creek was rechanneled for 1,000 feet and moved 200 feet from the tracks in just 13 working days.

Poppe Construction Company handled the rechanneling project for the railroad and used an International TD-18A with a six-yard scraper and an International TD-14 with dozer to move 11,000 cubic yards of sand excavated for the new 40-foot wide, 8-foot deep creek bed.

Contractor Art Poppe says: *"My TD-14 on this job is a 1946 model and still going strong. It worked 4,500 hours on some mighty tough jobs before needing an overhaul. My TD-18A has to pull the scraper with no wheel support at times and that takes real power, but this crawler really is loaded with it. I find all my Internationals are designed and built to last."*

Call in your International Industrial Distributor before you buy that next piece of maintenance-of-way equipment. Get the details on why you will get greater work dividends from International "Power That Pays."

**INTERNATIONAL HARVESTER COMPANY**
**CHICAGO 1, ILLINOIS**

**INTERNATIONAL**
**POWER THAT PAYS**

INTERNATIONAL HARVESTER

*Economical* and *Fast*
Steam Generation
For *all* purposes
with the
*Elesco* Automatic Steam Generator

Push 2 controls and the generator operates automatically.

It saves space and weight.

Low investment cost.

Quick installation.

Steam is available in 3 minutes after generator is started.

Dependable safety controls.

Employs Controlled Recirculation...an advanced engineering principle.

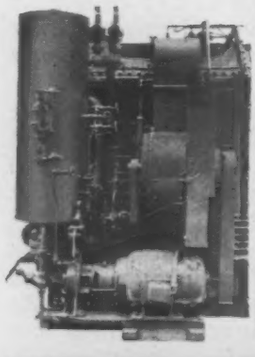
It is built by a leader in the design and manufacture of steam generating equipment, whose name-plate is on many of the world's outstanding and largest steam generators in public utility and industrial steam plants.

If you want the best in automatic steam generators, you will specify ELESCO...a name that has dependably served the railroads for many years.

• • • •

Many railroads use the Elesco Automatic Steam Generator for generating high-pressure steam...almost instantly...for power, heating and cleaning at terminals, engine houses and shops.

ELESCO



A number of diesel-electric freight and road switchers have been equipped with steam generators for passenger service. When they are not in passenger service, their generators, water tanks and piping are exposed to freezing temperatures. Eliminate this hazard with an Elesco Automatic Standby Control.

THE SUPERHEATER COMPANY
Division of COMBUSTION ENGINEERING, INC.
200 Madison Ave., NEW YORK, 16
Montreal, Canada, THE SUPERHEATER COMPANY, Ltd.

Superheaters • Pyrometers • Injectors • Steam Driers • Feedwater Heaters
Steam Generators • Oil Separators • American Throttles • Welded Boilers


Internal Revenue department. It also contains a typical plan and trust agreement for the guidance of employers. With the booklet, Wellington Company, sponsor of Wellington Fund, also is making available tax schedules and work sheets.

•

**THEY WANT TO KNOW, by Earl Bunting and Edward Maher. 96 pages. National Association of Manufacturers, 14 W. 49th st., New York 20. Single copies, $1.75. Quantity discount.**

This handbook was written to supply supervisors and executives with answers to questions employees ask. It deals with our free political and economic system, and tells how the system affects jobs, incomes and American liberties by giving clear answers to questions such as: What causes depressions and can they be prevented? How much of our present prosperity is real? What are the job opportunities ahead in business? and Are corporate profits excessive?

•

**GOT A HOLE IN YOUR POCKET? (3½ cents each); YOURS? (3½ cents each); PIONEERS OF PROGRESS (10 cents each); WHAT ABE LINCOLN SAID ABOUT MAKING FRIENDS (3 cents each). Employee Information Service, National Association of Manufacturers, 14 W. 49th st., New York 20. Write for special prices on quantities of more than 3,000. All prices f.o.b. New York.**

These pamphlets have been prepared for distribution by employers to employees. The first two bring the problem of federal spending and taxing right to the employee's doorstep. The employee sees that, as a citizen and taxpayer, he should support attempts to slice federal spending wherever possible and refrain from demanding new government handouts in future. "Pioneers of Progress" shows how powerful, centralized governments, with big spending, high taxes, and rigid controls, have always stifled human advance, while people left free and unhampered have forged forward. The brochure about Lincoln tells a warmly humorous anecdote about the great President to help build harmony in the plant.

•

**THE FIRST HALF-CENTURY IN RETROSPECT; TEMISKAMING & NORTHERN ONTARIO RAILWAY, 1902 — ONTARIO NORTHLAND RAILWAY, 1952. 16 pages, illustrations. Ontario Northland Railway, North Bay, Ont. Free.**

A brief history of the Ontario Northland, and its predecessor, the Temiskaming & Northern Ontario. It is copiously illustrated, and also contains photographs of the various chairmen from 1902 to date.

•

**RAILWAY OPERATING STATISTICS; RULES, INSTRUCTIONS, INTERPRETATIONS AND DEFINITIONS USED IN CONNECTION WITH THE REPORTING OF RAILWAY OPERATING STATISTICS. Statement No. 5315, File 8-D-22. 28 pages. Bureau of Transport Economics and Statistics, Interstate Commerce Commission, Washington 25, D. C. Free.**

Class I railways are required to prepare and file with the I.C.C. monthly

Always an operating hazard—and a constant drain on the maintenance budget—rust is a doubly dangerous enemy now when it is difficult to obtain metal replacements.

RUST-OLEUM stops rust effectively—is the practical answer to many railroad rust problems. Its tough, pliable, rust-resisting film gives excellent protection to bridges, rolling stock, metal buildings, signal equipment, tanks and many other rustable metal surfaces.

## CUT YOUR MAINTENANCE COSTS

RUST-OLEUM cuts maintenance costs in two ways. (1) It prevents rust on new rustable metal surfaces so that costly replacements can be deferred longer than previously could be expected. (2) Because RUST-OLEUM can be applied *even* over metal already rusted—usually without sandblasting or the use of chemical rust removers—it saves many, many man hours. *Write for your copy of the NEW RUST-OLEUM Railroad Catalog.*

**RUST-OLEUM CORPORATION**
**2594 Oakton Street, Evanston, Illinois**

Available in colors, and aluminum

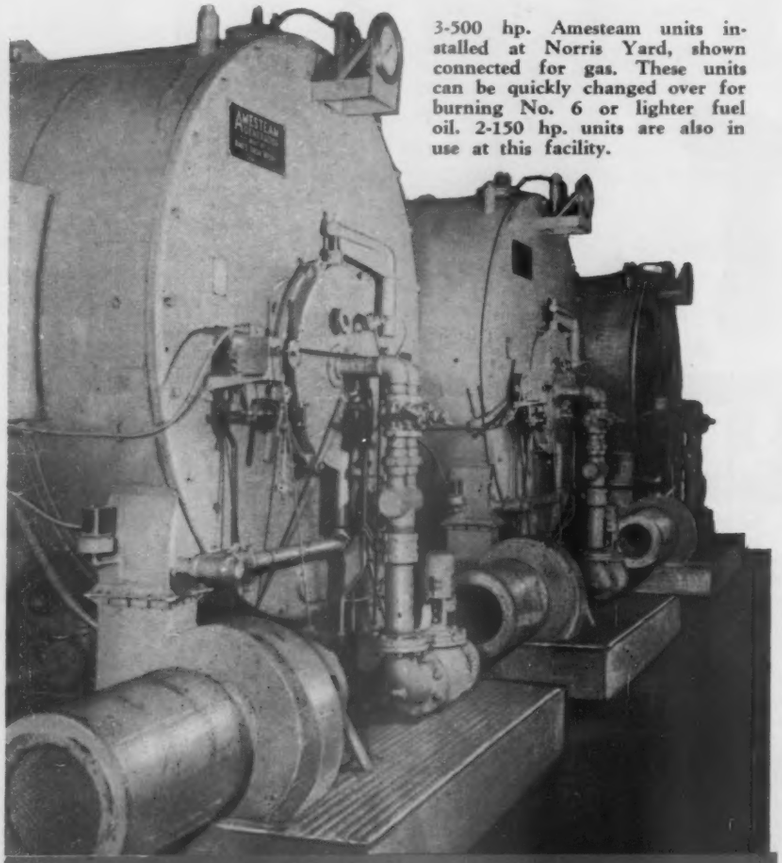
# AMESTEAM . . .

## At Norris Yard

**HAILED as one of the most modern freight yards in the country, the Southern's $11 million Norris Yard at Birmingham is equipped with the most advanced devices and communications. The Diesel shop and other facilities at this outstanding "push-button" yard are served by three 500 hp. and two 150 hp. AMESTEAM Generators. Here again as in a host of other rail installations, "the Railroad Boiler" is providing substantial savings.**

***Completely automatic,*** **these units provide dependable heat and process steam at low cost. No boiler room attendants are required. AMESTEAM evaporates 15¾ pounds of water on 1 pound of fuel using No. 6 oil — representing better than 80% thermal efficiency, which is guaranteed. Single units from 10 to 600 hp. Design pressure — 15 to 200 lbs. Higher pressures on special order.** ***Phone, write or wire.***

*"The Railroad Boiler"*




**3-500 hp. Amesteam units installed at Norris Yard, shown connected for gas. These units can be quickly changed over for burning No. 6 or lighter fuel oil. 2-150 hp. units are also in use at this facility.**

*Exclusive Distributors to the Railroads*
Engineering, Sales and Service
RAILROAD SUPPLY *and* EQUIPMENT *Inc.*
148 ADAMS AVE., SCRANTON 3, PA.
*Phone Scranton 7-3391*


reports of operating statistics (Forms OS-A, OS-B, OS-C, OS-D, OS-E and OS-F). Some two or three years ago the Committee on Statistics of the Association of American Railroads expressed the opinion that it would be very helpful to the railways, as well as the commission and numerous others interested in operating statistics, if all information pertinent to such statistics could be combined and published in a single pamphlet. These rules, instructions, interpretations and definitions have been taken from instructions included on the respective OS forms from the effective Classification of Mileage (train-miles, locomotive-miles, and car-miles) in the Uniform System of Accounts for Railroad Companies, and from files of the Bureau of Transport Economics and Statistics. Definitions have been included only to the extent deemed appropriate either in the interests of clarification or as contributing directly to a better understanding of the operating statistics.

### BOOK

**AMERICAN WARTIME TRANSPORTATION, by Joseph R. Rose. 290 pages. Thomas T. Crowell Company, 432 Fourth ave., New York 16. $5.**

This is a study of problems encountered in domestic transport during World War II and of their solutions by the various transport agencies, including both carriers and governmental authorities, operating in the field. The emphasis throughout is on operations. The general plan of the study is to set forth first the normal or peacetime pattern of transport in each area of operations in which difficulties arose; then to show the distortions in this pattern brought about by the war, and the difficulties that followed; and finally to examine measures taken to meet them.

### FILM AND FILM DIRECTORY

**"HIGHWAYS AND BYWAYS—U.S.A." 16-mm., 28-min., sound, color. Association Films, Inc., 79 E. Adams st., Chicago. Available for free loan for showings in towns of less than 10,000 population.**

The story of how the farmers of one county got their fair share of dollars allocated by the state for roads and streets. It is recommended for service clubs, county agent meetings, grange hall showings, citizens' committees and church societies.

•

**NATIONAL DIRECTORY OF SAFETY FILMS—1953-54 Edition. National Safety Council, 425 North Michigan ave., Chicago 11. 75 cents.**

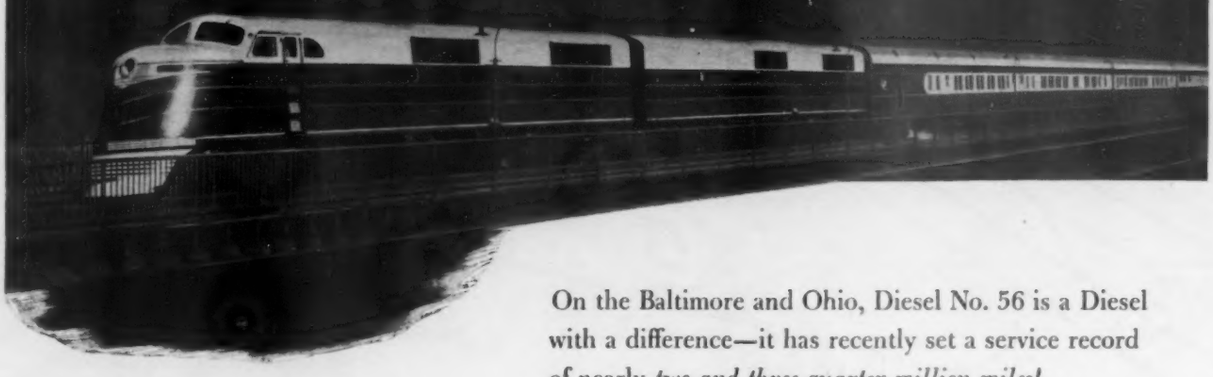
A directory listing 963 motion pictures and slide films, a number of which are either suited for, or directly related to, railroad work. In addition to occupational accident prevention and home and traffic safety, listings include films on first aid, fire prevention and civil defense. The Safety Council plans to furnish supplements as new films become available.

*Still on the go for the B&O*

# No. 56 rolls up over 2,650,000 mile service record

## with the help of

# CR-V STEELS



On the Baltimore and Ohio, Diesel No. 56 is a Diesel with a difference—it has recently set a service record of nearly *two and three-quarter million miles!*

Vital parts of Chromium-Vanadium steels have helped make this record-breaking performance possible.

For example, driving motor pinions and gears made of Chromium-Vanadium steel (SAE 6145) give maximum wear resistance and high strength-to-weight ratios. Exhaust valve springs of Chromium-Vanadium steel (SAE 6150) resist high temperatures.

Couplers and other vital parts made of Manganese-Vanadium steel offer greater strength and toughness.

To find out how Vanadium steels can be engineered to fit *your* railroad design needs, contact our nearest technical service representative today. He will be glad to help you with your application.

VANCORAM

MAKERS OF ALLOYS, CHEMICALS AND METALS

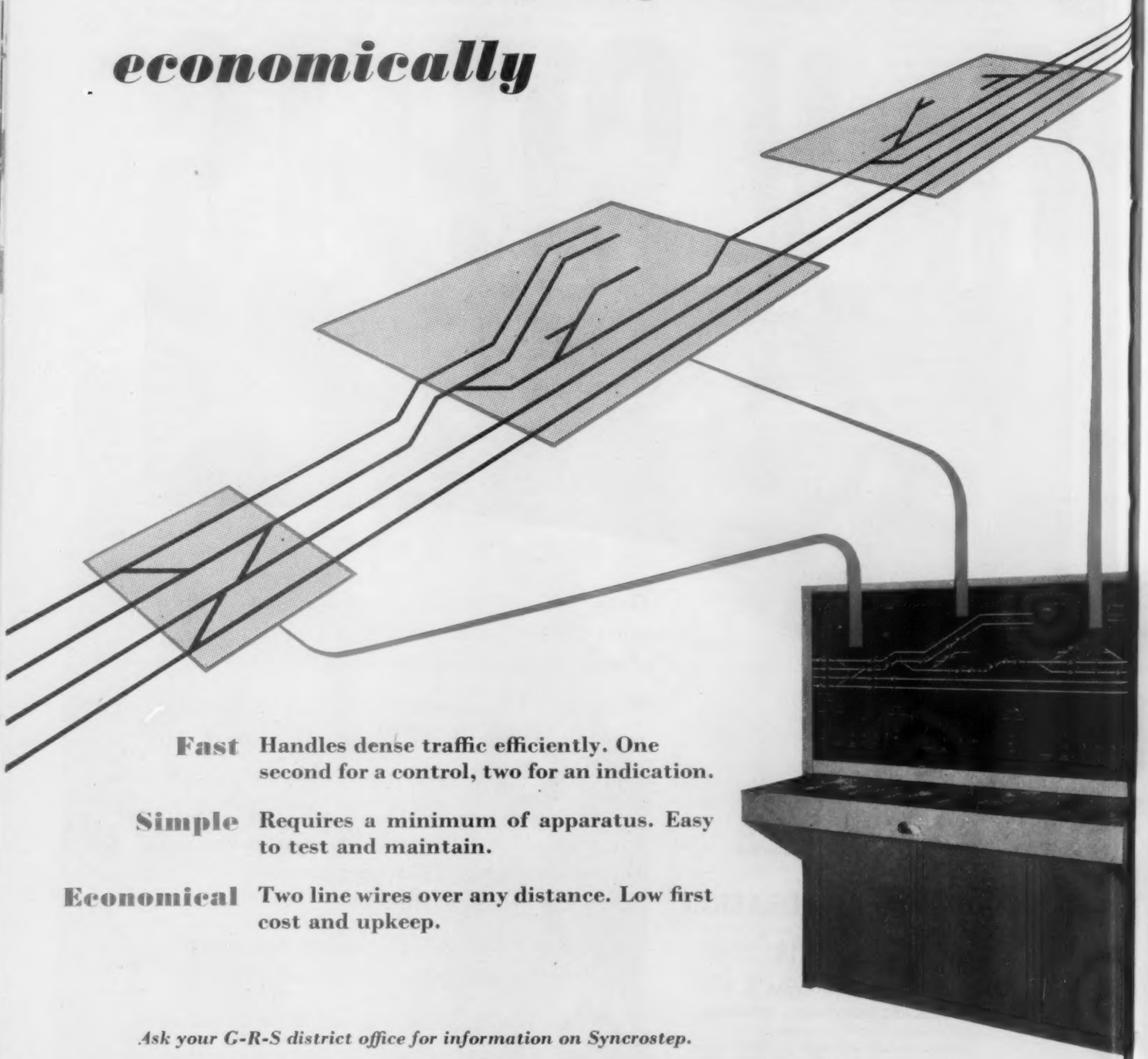
**VANADIUM CORPORATION OF AMERICA**

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

DETROIT • CHICAGO • CLEVELAND • PITTSBURGH

# G-R-S Syncrostep

## Remote Control System for consolidating interlockings economically



**Fast** Handles dense traffic efficiently. One second for a control, two for an indication.

**Simple** Requires a minimum of apparatus. Easy to test and maintain.

**Economical** Two line wires over any distance. Low first cost and upkeep.

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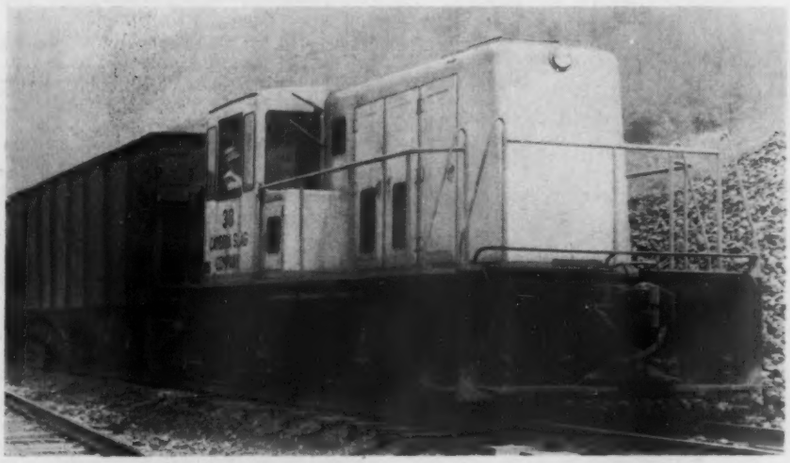
A-2656

# What's New in Products



### G.E. Rounds Out Industrial Switcher Line

The General Electric Company has added a 35-ton two-axle diesel-electric locomotive to its line of industrial switchers. It will fill in the line between the 25- and the 45-ton locomotives, giving a complete line of seven industrial switchers ranging in weight from 25 to 95 tons and in power from 150 to 660 hp.

The 35 tonner is 9½ ft. wide compared with the 8-ft. width of the 25 tonner, the extra 1½-ft. width making it possible for the operator to see around larger railroad cars. It is built 1½ ft. lower than the 45-ton locomotive facilitating operation through low doorways in plant buildings.

The new locomotive is equipped with recessed Pullman type steps providing easier access to the deck and affording greater safety to the brakemen.

It has one Cummins Model NHBIS-600 diesel engine nominally rated 275 hp. at 2,100 r.p.m. It is directly connected to a General Electric Type GT-558 d.c., shunt-wound generator which is equipped with a winding to permit it to be used for starting the engine by storage-battery power.

There is one auxiliary generator, mounted on the engine, to furnish auxiliary power at a constant potential over the full operating range of engine speed.

A 16-cell, lead-acid type storage battery for starting the engine and for supplying auxiliary power when the engine is shut down, is charged from the auxiliary generator.

The locomotive has two G.E. d.c. traction motors each of which drives through double-reduction spur gearing. It is equipped with single-station, single-unit control with the operator's station placed on the right-hand side of the cab. Grouped at this station are the throttle lever, reversing lever, brake valve, sander valve, bell and whistle controls, window-wiper controls, gage panel, and switches for controlling lights.

The locomotive speed is controlled by the throttle lever, which regulates the diesel-engine output and is also interlocked with the electrical control. Maximum speed is 20 m.p.h.

Air-brake equipment is straight air, with one self-lapping engineer's valve. Two brake cylinders are mounted on the underframe and operate fully-equalized brake rigging which applies one shoe to each wheel. A hand brake of the ratchet and drop-lever type is provided for holding the locomotive at standstill.

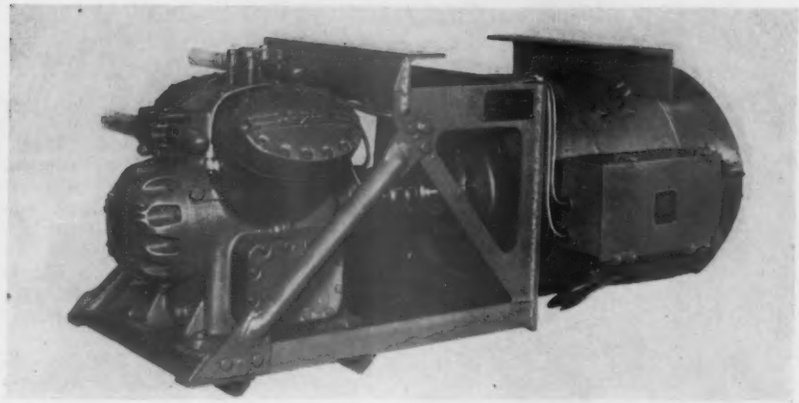
Automatic air for trainline braking and brakeman's steps to meet Interstate Commerce Commission specifications can be furnished. Although the standard weight is 35 tons, the locomotive can be ballasted to 40 tons •

### Unloading Compressors For Air-Conditioning

Electro-mechanical air-conditioning equipment of the Safety Car Heating & Lighting Co., New Haven, Conn., now features a modern four-cylinder compressor of the unloading type manufactured by Carrier Corporation, Syracuse, N.Y. Directly connected to

**THE "TOURNATRAIN," a diesel-electric powered, rubber tired, trackless train, has been designed by R. G. LeTourneau, Inc., Longview, Tex., to provide heavy-duty transportation in areas—such as deserts and jungles—where such transportation has not heretofore been physically or economically practicable. Heart of the "Tournatrain" is the "electric wheel" (left); each wheel carries a pneumatic tire 5 to 10 ft. in diameter, and has within its rim an electric motor and gear reduction mechanism.**

**Power for the motors is supplied by diesel driven electric generators mounted on the "locomotive." The same motors which provide individual propulsion for each "car" also supply braking power when needed. Each "car" of the "train" is coupled to the car ahead of it in such a way that it follows in the same tracks; by what is described as "a simple automatic steering device" the path of the "locomotive" is duplicated in turn by each "car" (right).**



a substantially constant speed d.c. motor, this compressor is the same as furnished by Carrier for commercial refrigeration applications.

A built-in cylinder unloading device provides automatic cooling capacity control, resulting in substantial power savings and smooth modulation in response to load requirements. This compressor eliminates the use of speed modulating relays on the motor control panel, thus reducing a potential source of failure and the amount of servicing required. The automatic capacity control is obtained in response to suction pressure changes. The lubrication oil supply is used to furnish the power to operate the cylinder unloading mechanism; therefore, upon starting the unit, three of the cylinders remain unloaded until the oil pressure builds up. This considerably reduces the starting currents in the direct-connected motor •

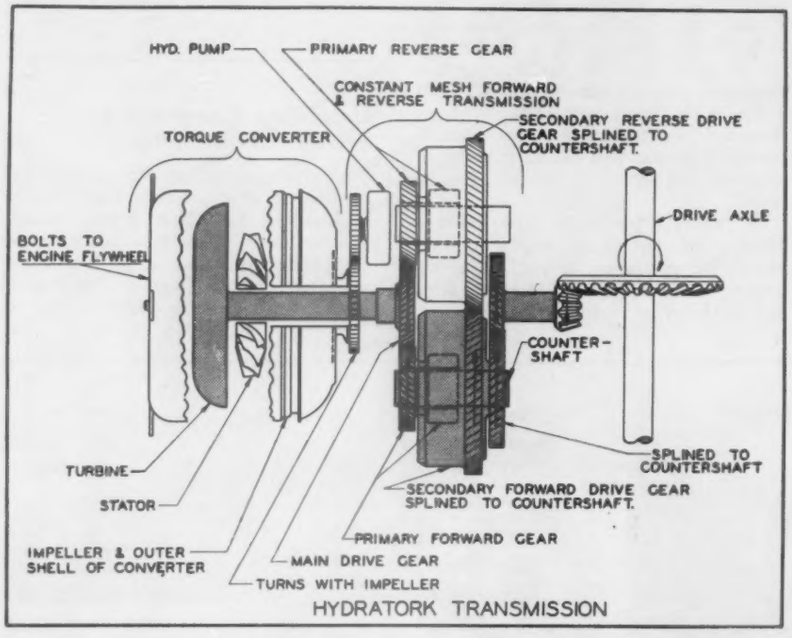



**DIAGRAM OF "HYDRATORK" transmission unit in forward motion. Gears which are under power are shaded. The main gear, which is driven by the turbine, is in constant mesh with the primary forward and reverse gears.**

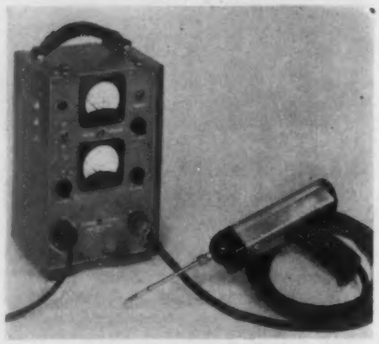
### *Torque Converter for Clark Fork-Lift Trucks*

Production of a torque converter drive (known as the "Hydratork Drive") has been announced by the Clark Equipment Company, Battle Creek, Mich. The new automatic transmission makes it possible to operate a gas-powered fork-lift truck with three simple controls: an accelerator, a brake pedal, and a forward-reverse lever. The clutch and gear shift have been eliminated.

The builder claims the "Hydratork Drive" makes possible reduced maintenance requirements by eliminating the necessity for shifting gears, as well as giving the operator the advantage of smoother acceleration, more positive control at all times, a quick, effortless changeover from forward to reverse motion, and a controlled "inching" ability.

On the basis of field tests, it is reported that the drive substantially increases the work capacity of gas-powered trucks with standard transmissions, at the same time reducing operating and maintenance costs.

The unit is currently being manufactured for Clark's "Utilitruc" line of fork-lifts in the 6,000-7,000 lb. capacity range. Installed at the factory the unit costs $370. Clark emphasizes that the unit is not, and will not be available for field installation •



### *Refrigerant Leak Detector*

General Electric's halogen-sensitive leak detector has been redesigned to permit easier detection of leaks in closed systems, according to a recent announcement by the company's Meter and Instrument department, Schenectady, N.Y.

The portable instrument, introduced five years ago, can detect a leak so small that only 1/100 ounce of gas will pass through the opening in a year. It has gained wide acceptance in testing for leaks in refrigerator and air conditioning systems, tanks, boilers, piping, and other products that must be leak proof and into which a halogen gas can be introduced as a tracer.

In the redesigned equipment, Type H-1, a loudspeaker has been built into the control unit for audible indication of leaks. The new device also features an automatic balancing circuit to compensate for changes in background air contamination. Incorporated in the control unit is a new lightweight, internal voltage stabilizer. The former model required an external voltage stabilizer.

The Type H-1 detector retains the features made popular in the former model, such as the earphone plug and the instrument indication of leaks. Now, however, leak indication can be simultaneously indicated by means of the dial, earphone attachment, or through the built-in loudspeaker.

The detector equipment consists of a pistol-like "sniffer" and a 17-lb. control box about the size of a portable typewriter •

# THE ENGINEER'S REPORT

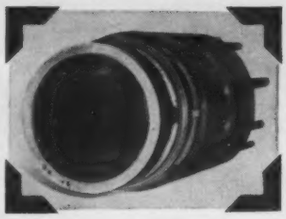
DATA

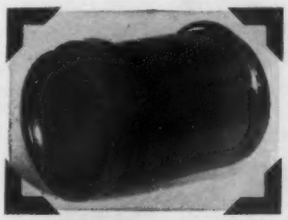
| | |
|---|---|
| LUBRICANT | RPM Delo Oil R.R. |
| UNIT | Diesel locomotive — 65 to 12 gear ratio |
| SERVICE | Mountain log haul on grades to 3.7% |
| PERIOD | 3½ years |
| LOCATION | Tacoma — Morton, Wash. |
| FIRM | The Milwaukee Road |

# All liners, pistons still in use after 8800 hours!

LUBRICATED WITH RPM DELO OIL R.R., engines in the specially low-geared locomotive shown at right required no replacements of bearings, pistons or liners, no major repair work of any kind during 3½ years of hard service—more than 8800 hours of engine operation and 149,859 miles of locomotive travel. Geared at a ratio of 65 to 12, the locomotive hauls up to 134 carloads of logs out of the mountains on upgrades of 2.5%. Going in, upgrades reach 3.7%.

AFTER 48,800 MILES of constant service, this assembly was removed for inspection. It proved the low liner-wear rate: Top bore diameter was 8.5025, bottom 8.501—less than 0.002 out of round!





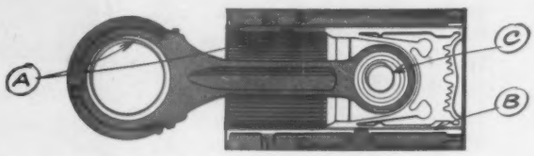
NO LACQUER DEPOSIT trouble has been encountered in the engines although they idle about 30% of the time, often in low sub-zero temperatures. Rings remain free, as shown in this picture.

FREE CATALOG: "How to Save Money on Equipment Operation," a new booklet full of valuable information, will be sent you on request to Standard Oil Company of California, 225 Bush St., San Francisco, Calif.

RPM DELO LUBRICATING OILS

TRADEMARK "RPM DELO" REG. U.S. PAT. OFF.

## How RPM DELO Oil R.R. prevents wear, corrosion, oxidation




A. Special additive provides metal-adhesion qualities...keeps oil on parts whether hot or cold, running or idle.

B. Anti-oxidant resists deterioration of oil and formation of lacquer...prevents ring-sticking. Detergent keeps parts clean...helps prevent scuffing of cylinder walls.

C. Special compounds stop corrosion of any bushing or bearing metals and foaming in crankcase.

FOR MORE INFORMATION about this or other petroleum products of any kind, or the name of your nearest distributor handling them, write or call any of the companies listed below.

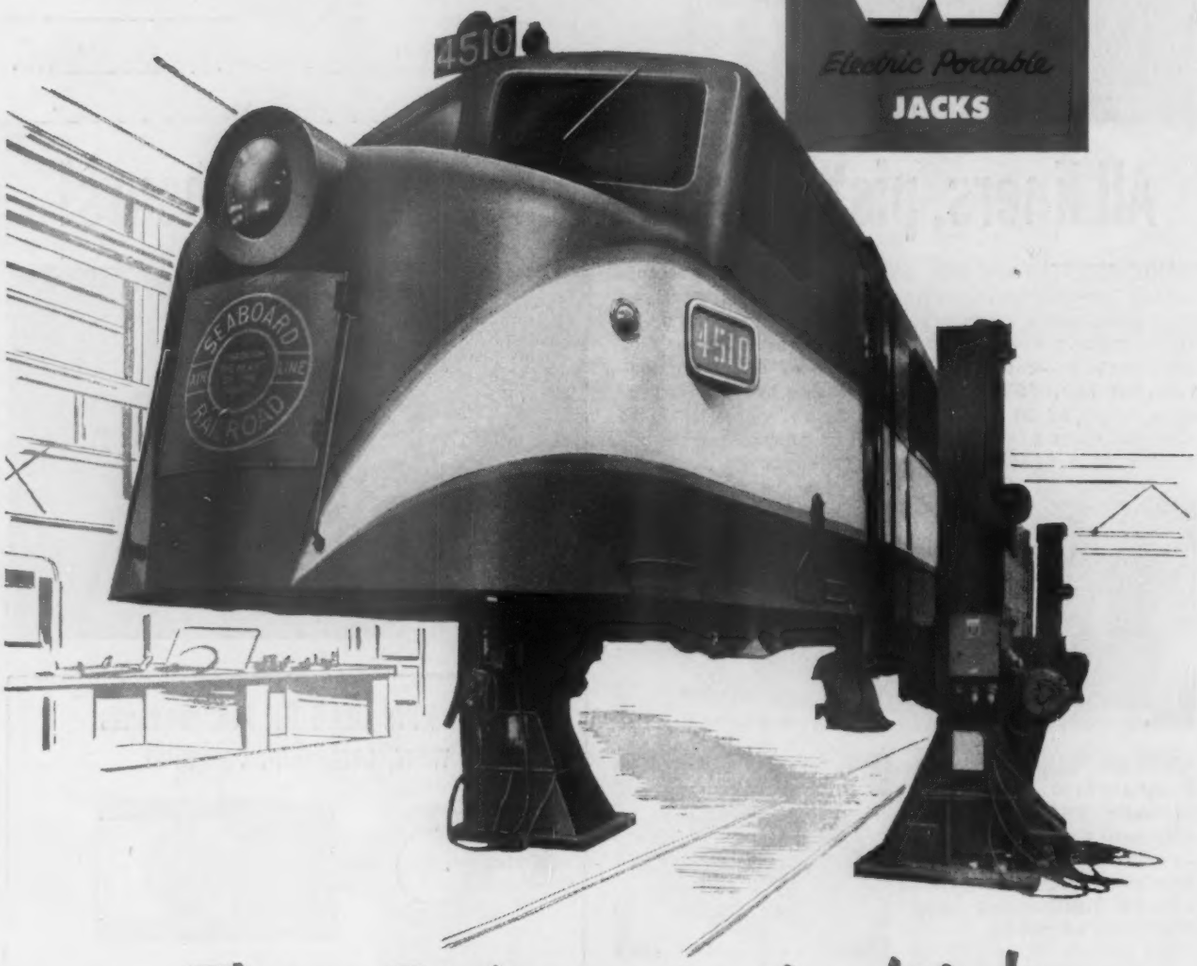
STANDARD OIL COMPANY OF CALIFORNIA, San Francisco 20 • STANDARD OIL COMPANY OF TEXAS, El Paso
THE CALIFORNIA OIL COMPANY, Barber, New Jersey • THE CALIFORNIA COMPANY, Denver 1, Colorado

SERVICE THEM WHERE THEY STOP!

WHITING

*Electric Portable*

JACKS




# These Jacks go to the job!

Keep them rolling with Whiting Electric Jacks . . . the jacks that put ton-moving muscles in your fingertips! Whiting builds jacks for every need—crane-carried special heavy-duty lifters as shown above . . . wheeled jacks that roll into place . . . jacks equipped with lifting beams . . . and all-purpose pit jacks. Tenders, cars, switchers or locomotives . . . all are serviced more safely and at lower cost with Whiting jacks. Because of their high lift they perform their work in one operation. Their simple design and accessible, rugged construction reduce maintenance to a minimum. Their large steel base provides firm footing . . . powerful alloy steel screws easily sustain the load . . . and any one jack in a set of four can be operated individually or all at the same time. Whatever your requirements—from 5 to 80 tons—get in touch with Whiting. Write today for complete data.

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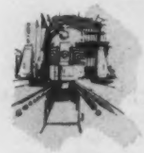
**Look Into These Time and Cost Savers, Too!**

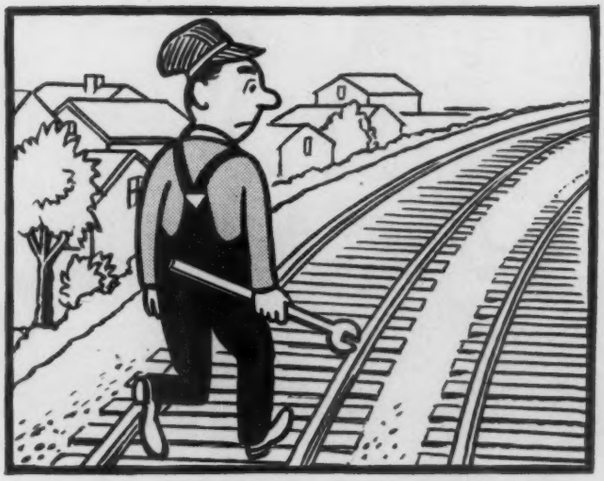


Drop Tables

Body Supports

Cross-Over Bridges

Overhead Cranes



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*Desired more than just*
*walking the track*
*The Age swung the door*
*Brought promotions galore*
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# Benchmarks and Yardsticks

**NO GAME CAN BE PLAYED** with any peace or pleasure—unless the players agree upon recognized rules of conduct, and unless they obey these rules in spirit as well as literally, even when they are not being watched.

**Similar rules** are equally necessary in the more serious activities of life, such as business and politics. Some of the rules for these activities are provided by civil and criminal law—but law alone is insufficient to keep human relations in economic and political activity on a basis of concord and mutual satisfaction. In addition to laws, there are "principles" which participants need to abide by. There isn't any coercion to enforce these principles. The participants obey them or not as they choose.

**What are these principles?** In the conduct of economic affairs (i.e., business or industry), there are two sets of such principles—one grouped under the general heading of "capitalism." or freedom, and the other under the heading of "socialism," statism or coercion. The first principle in the category of capitalism (to which all its other principles are subsidiary) may be stated somewhat as follows: *All economic (i.e., business or industrial) activity should be left to the initiative of the people themselves—with complete freedom among them to enter into contracts with each other, and with government interference limited to keeping the peace and punishing violence and fraud.*

**The first principle** of socialism is the antithesis of the first principle of capitalism and goes something like this: *The management of economic activity of all kinds belongs primarily to the state, and initiative and direction of economic activity—if left at all in the hands of private citizens—stay with them only so long as this activity suits the convenience of the state.*

**Most** of the economic and political turmoil in this country today arises because the people have not yet firmly decided which of these two sets of incompatible principles they prefer to live under.

**There could** be economic and political harmony if either the principles of capitalism or those of socialism were generally accepted and obeyed. Friction and strife arise from the fact that most people want capitalist principles to dominate in some activities and socialist principles in others—and there is no generally accepted rule to determine which activities should be managed capitalistically and which socialistically.

**A good deal** of unprofitable debate on transportation issues could be avoided if the participants would first agree on their ground rules—whether they are to be those applicable to socialism or those applicable to capitalism. If agreement could be reached on this one important but simple question, most of the other issues would vanish.

J. G. L.

# FREIGHT CAR MASTERPIECES
## High Speed Trucks

SCULLIN TRUCKS

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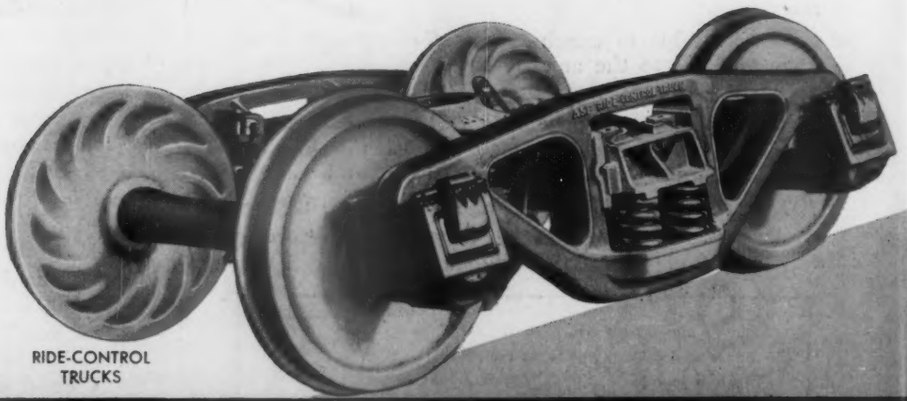
**SCULLIN TRUCKS**

**Truck Side Frames and Truck Bolsters Produced by Scullin Steel Co.**



RIDE-CONTROL TRUCKS

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**SCULLIN STEEL CO.**

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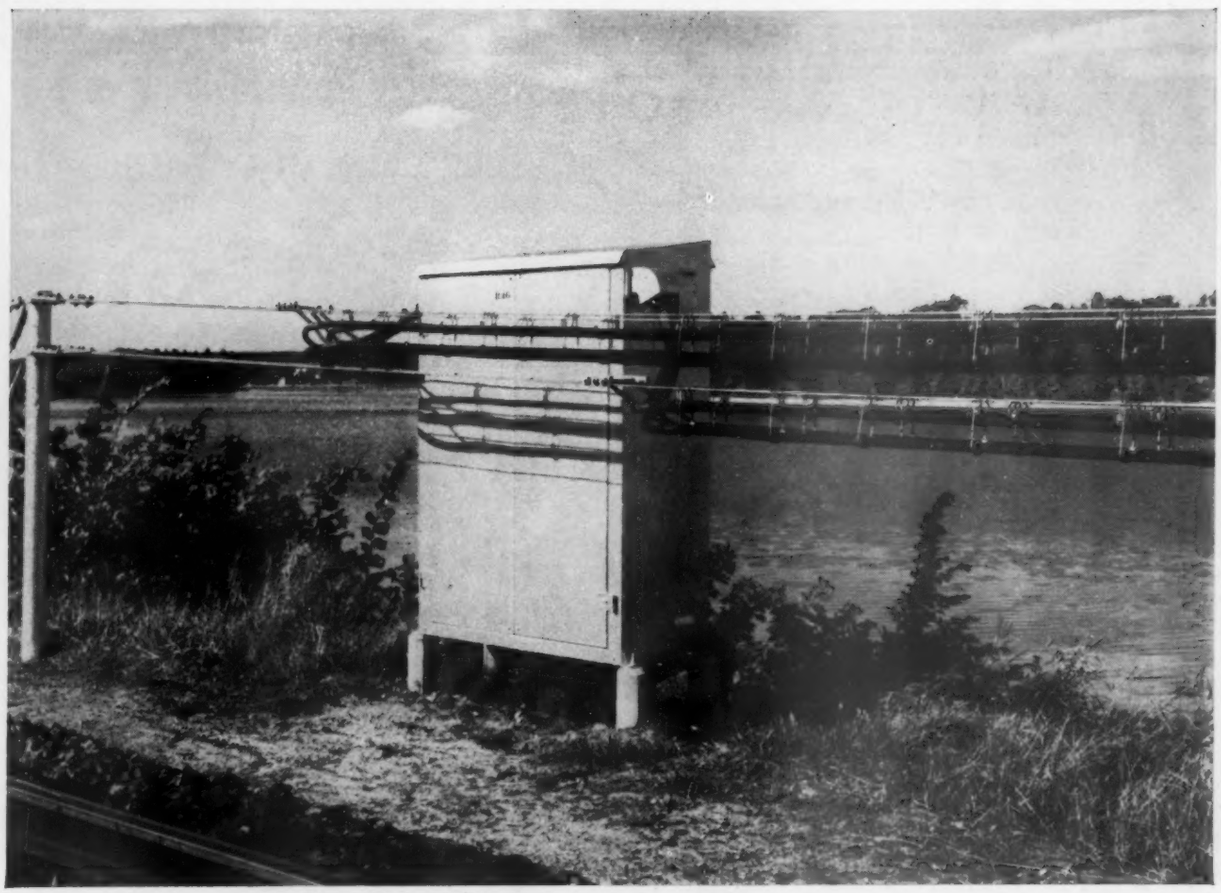

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When you install G-E Flamenol* railway signal cable you'll discover it costs less to maintain than most other cables. For example, Flamenol cable does not require painting to protect it from the weather—so cable-painting costs are eliminated. This saving alone can pay for the cable in just a few years.

But this one saving is minor when compared with all the other advantages Flamenol cable can give you. Flamenol cable will not support combustion. It is not affected by sun, water, soil acids, ozone, oils, chemical fumes, and many other conditions that cause rubber-type insulations to deteriorate. This means you can expect Flamenol cable to deliver an exceptionally long, maintenance-free service life. And it offers better protection for your signal circuits than has been available to you in the past.

Specify Flamenol railway signal cable today—for aerial or underground use—indoors or outdoors—in conduit or air. Call your G-E Construction Materials district office, or write to Section W84-874, Construction Materials Division, General Electric Company, Bridgeport 2, Conn.

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GENERAL ELECTRIC

RAILWAY AGE FORUM
Do the Railroads Need the Car Builders?*
Compared with the manufacturers of specialties, which are usually protected by patents, the contract freight-car builders are in a vulnerable position in the matter of competition with the railroads as builders. Thirty years ago about 11 per cent of the new freight cars were built in shops of the railroads and private car lines. Today, these shops build in excess of 30 per cent of the new cars.
resources to provide the facilities with which to build all their own cars? Indeed, few roads which build cars are not dependent on the car builders in part. Since, then, the railroads, in the long run, need the car-building industry, it is to their interest to have it a healthy industry.
A Feast-or-Famine Market
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to build...or to buy?
a.c.f.
the railroads are looking up!
a.c.f.
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WITH a.c.f. FREIGHT CARS
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THE TRUTH ABOUT standardized DESIGN
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For Mass Production Economy.....
Call in a.c.f.
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# . . . as we've said

**In 1950**

Railroad capital investment in shops and tooling for car building beyond the normal requirements for car maintenance may well be hazardous and unnecessary.

**In 1951**

A.C.F.'s freight car building facilities are second to none. There is no economic advantage to a Railroad in duplicating these facilities.

A.C.F.'s vast car-building facilities...unduplicated in any railroad car shop...are geared for top-speed deliveries.

Through standardized design, A.C.F. helps cut railroad operation and maintenance costs.

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Through welded construction, A.C.F.-built cars outlast ordinary cars...keep rolling long after others are out for repairs.

Toughening competition makes it difficult for a Railroad to justify the investment necessary to duplicate A.C.F.'s modern facilities.

By building for *many* Railroads A.C.F. offers each the advantage of mass production.

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It is frequently more economical to buy than to build. You can prove this by your own investigation. Mass production facilities enable A.C.F. to turn out a better car, that's why it's more advantageous for you to buy than to build.

Whether you order ten or a thousand, A.C.F.'s exclusive assembly line construction saves money...performs many jobs in record time.

* *This is the title of a provocative article in the June 22nd issue of Railway Age. We believe the above facts, as well as the article itself, are our most effective answer to this important question.*

*For more information on the basic considerations involved, call in your nearby A.C.F. Representative. American Car and Foundry Company • New York • Chicago • St. Louis • Cleveland Philadelphia • Washington • San Francisco*

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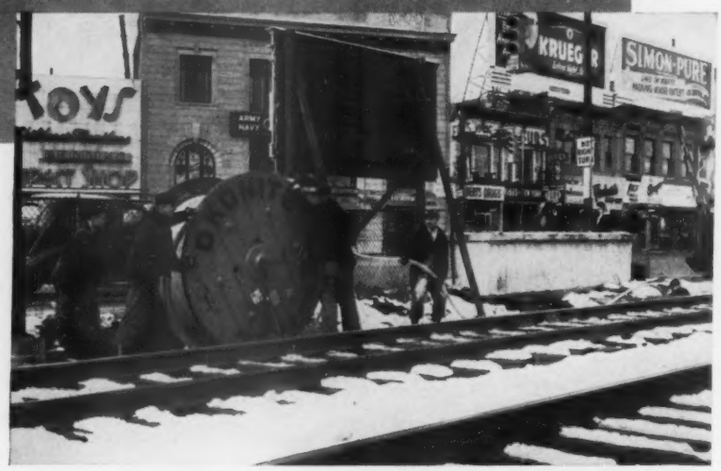
# ERIE SELECTS OKONITE POWER AND SIGNAL CABLE




Service-proved Okonite combination power and signal cable being installed in the conduit was selected for resistance to extremes of Eastern climate. The insulation is applied by the strip process and vulcanized in a continuous metal mold to provide a uniform cure throughout the entire length of cable. This assures better physical and electrical characteristics than can be obtained by any other method.

In Passaic, N. J., the Erie Railroad recently removed the old gate towers and manually controlled crossing gate system and installed 13 new automatically controlled gates. The instrument cases are wired with Okonite signal control wires at 13 crossings and the combination power and signal cable the men are shown installing is another Okonite product.

Every automatic crossing along your right of way will benefit from the circuit security provided by Okonite cables and wires. Your maintenance costs will decrease, and good will should increase. Why not profit from the experience of over 100 Class 1 roads and transportation systems and install Okonite?

For information on Okonite railroad wires and cables consult your local representative or write
The Okonite Company, Passaic, N. J.

The Okoprene sheath protecting the Okonite signal control wires specified for this instrument case will not permit end leakage and need not be removed at terminal ends. Thus, the completely protected rubber insulation is not exposed to the elements and will not check or crack. A substantially increased service life is the result.

OKONITE SINCE 1878 *insulated cables*

75th ANNIVERSARY

1725

# No Reason for Gloom About Railroad Prospects

No individual or business, bedeviled with the fear or conviction that failure is probable, can be expected to realize his or its inherent opportunities for progress. This psychological handicap must be removed wherever found. There is at least some disquieting evidence of this type of defeatist opinion in and around the railroads—and it just must be corrected. No other problem confronting the industry is of greater immediacy or importance. For example, in the New York Times of August 2, J. H. Carmichal, a member of that paper's financial staff—and one of the nation's able writers on transportation—had an article on the outlook for the railroad industry, which made far from cheerful reading. It is improbable that a reporter of Mr. Carmichal's ability and integrity could write such an article without its being to some degree a reflection of some background of despondency within the railroad industry itself.

"With a steady stream of trucks coming off the assembly lines," Mr. Carmichal wrote, "and with barge and tugboat production at a high level, the railroads are expected to have difficulty holding their relative position even if business activity holds at its current strong rate."

He went on to point out that current traffic volume on the railroads is less than that of two years ago even though the railroads "have been handling virtually all the traffic in military supplies." Continuing, he said that the chances of putting the passenger business on a profitable basis "seem rather remote and. . .would require long experimentation and probably a drastic change in equipment."

While the recovery of "some" lost freight traffic did not appear to him to be "so difficult," nevertheless he found the problem complicated by the rigid regulation to which the railroads are subjected, and also by the working rules of railway labor, many of which "go back nearly 100 years and have been outmoded by changes in rail operations." The report went on to tell of the loss of coal traffic, both to competing agencies of transportation and to competing fuels which do not move by rail. And, finally, mention was made of the inroads of competing agencies on grain, automobile, milk and citrus traffic.

All in all, the article presented a picture of almost unmitigated gloom, except for one brief paragraph, which carried in it the possibility of negating the forebodings of the entire article. This paragraph read as follows: "Since the railroads probably offer the cheapest method for the mass movement of freight over land yet devised, there seems to be an opportunity for some recovery in their freight business if approached from a practical standpoint and with a greater degree of cooperation among the interested groups."

What that one paragraph signifies, of course, is that nothing adverse that has been happening to railroad freight traffic—especially that diverted to truck movement—is by any means inevitable. There is, in fact, nothing in economics or technology that has caused the great traffic diversion that has occurred; it has come about solely because the railroads have not in all instances given a quality of service of which they are capable and have not fully reflected their economic superiority in their competitive rates. The failure of railroad rates to give full effect to the railroads' economic advantages is ascribable, at least in large part, to the strict regulation to which the railroads are subjected—to the reluctance of regulators to allow them to take full advantage of their economic superiority in making competitive rates; and to the prohibition placed on the railroads by the Fourth Section, forbidding reducing rates where competition exists, unless similar reductions are made where competition does not exist.

The competitive situation of the railroads as regards freight traffic cannot, however, be blamed entirely on the regulators. The railroads themselves have not yet given united and emphatic evidence that they do not intend henceforth to give up, without a hard fight, any more freight traffic which they can handle more economically than their competitors. There are reasons—sound ones, too, perhaps—for railroad caution in this regard, for example, the tendency of regulators to seize upon voluntary reductions in particular rates as an excuse for holding down the rate level as a whole. But such counsels of extreme prudence, whatever their validity heretofore, appear to be losing force in the face of the greater danger of continued traffic erosion for which no sound economic reason exists.

The fact of the matter is that railroad properties are, on the average, in excellent condition. That is to say, the railroads are capable of giving more satisfactory service than they ever have given before. There is greater and greater acceptance, all the time, of the justice and necessity of permitting

the railroads to retire from hopelessly unprofitable operations. There is, in short, no reason whatsoever to be otherwise than optimistic over what the results would be of an aggressive campaign by the railroads—using both service and rate incentives—to win and retain all the freight traffic to which they have a sound economic claim; and that would mean a lot of traffic they are not hauling now. It is our belief that more and more railroad men are taking this view of the situation, and that their attitude is likely to predominate in the industry at no very distant date. If it does, Mr. Carmichal will be able to write another article—and a much more cheerful one.

There are many more advantages to an agressive business-building campaign than the increased gross revenues which could be expected as the initial result. The most important of these added advantages is improvement in the morale of officers and employees—which is easy to maintain at a high level in a growing and thriving business, and practically impossible to retain in an enterprise which is on the skids.

The false comparison of railroads with mule-powered canal boats and horse-drawn stagecoaches is belied thousands of times daily by traffic being moved by the railroads which no other form of transportation could possibly handle at charges patrons could pay and still stay in business. The railroads, quite contrary to being on the skids, are on the threshold, potentially, of the greatest period of public service and prosperity they have ever experienced. All they need to do in order to turn their potential into actual is to search out, and use to the utmost, traffic-wise, their natural advantages. If regulatory action can be shown to be standing in the way of transportation economy and progress, then shipper and public support can certainly be obtained for effecting the necessary changes in regulation. Nobody, in the long run, is going to support regulatory policies which can be demonstrated to be harmful to the public interest in greater economy and efficiency in transportation.

Mr. Carmichal is an honest and competent reporter and we do not question the accuracy of his article, i.e., that it reflects the opinion of a good many people about the railroads. But we also believe that he didn't talk to enough of the militant and ascendant people in the railroad business. We believe, further, that there are more and more of such people in the industry and that their views, before long, are going to predominate. It's high time they did—because the first ingredient in success is belief, on sound and persuasive evidence, that success is attainable. That evidence exists in the railroad business, and the knowing ones are aware of it. We hope they'll soon desist from keeping their convictions to themselves.

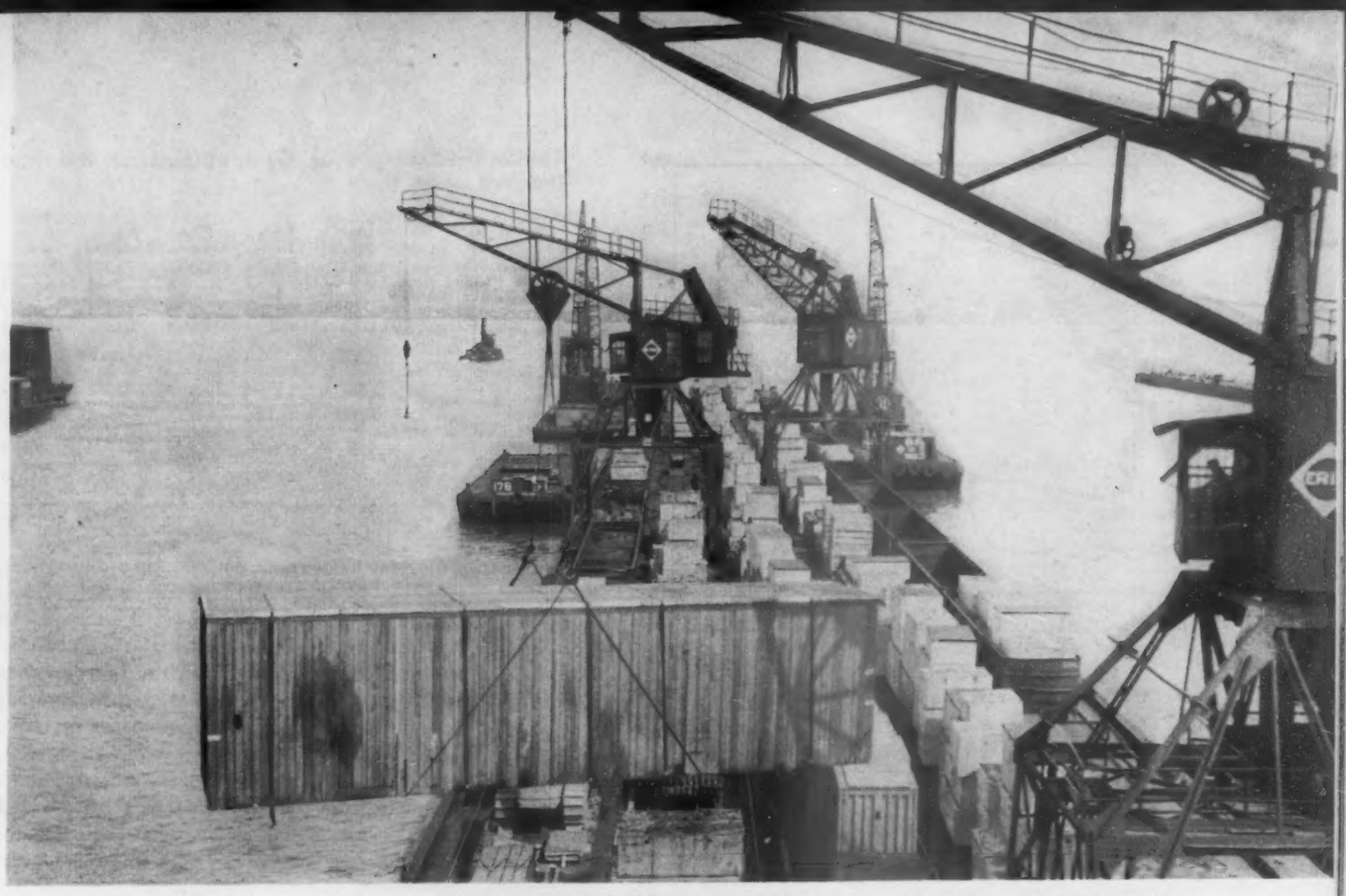
# Is Mr. Kennedy Serious?

As was reported in these pages a couple of weeks ago, W. P. Kennedy, president of the Brotherhood of Railroad Trainmen, is seeking "the formation of a national committee to promote the shipment of highway trailers on flatcars on railroads throughout the country." Mr. Kennedy's proposal is the second move made by officers of railroad operating unions to promote active development of "piggy back" traffic. The first—and a sensible, practical move—was a joint invitation extended to Dave Beck, president of the International Brotherhood of Teamsters, by the B.L.F. & E., the B.R.T. and the Brotherhood of Locomotive Engineers, to seek amicable settlement of the jurisdictional and conflicting union interests involved in "piggy back" movements. The first such meeting has taken place, with others scheduled.

Many influential railroad officers will agree with Mr. Kennedy that the railroads should actively promote "piggy back" movements. But they recognize that for such movements to be economical to the railroads and sufficiently attractive to the truckers to justify patronage, unusually fast train schedules will be necessary. For, if a trucker can't move his trailers as fast, or faster, by rail than over the highway, he won't jeopardize his traffic by patronizing the railroads. Some of the restrictive labor practices enforced by the railroad unions now promoting "piggy back" services could present a major obstacle to operation of such schedules. The requirement for changing crews, and usually cabooses, at every division point is an example.

The interests of the brotherhoods in the trailers-on-flats development should be welcomed—and particularly their contact with the teamsters' union. Greater knowledge of the work of truck drivers, of their wages and how they earn them, ought to be enlightening to railroad operating employees. They are likely to find out, for example, that the "basic day" of 100 miles which applies in railroad freight service is rather old-fashioned, and that the relative freedom with which motor transport can use its forces gives it powerful cost and service advantages.

Aside from such possible by-products, however, the interest of railway unions in a practicable approach to attracting a heavy volume of traffic to the railroads is most heartening. Will these unions give effect to their good intentions by doing all they can to help the railroads provide the service and rates which will be strongly attractive to "piggy back" traffic? We don't know whether Mr. Kennedy was serious or not in making this proposal, but we are optimistic enough to believe that he was.



**THE ERIE'S STUDIES showed that comparison of revenues—rather than tons—with economic indicators enabled it to make accurate traffic forecasts.**

HOW THE ERIE IS . . .

# Forecasting Freight Traffic

**By E. S. ROOT**
Chief of Research, Erie

Every decision involving the future embodies a forecast. It may be no more than a hunch or, on the other hand, the result of elaborate analysis. However, the complexities of modern economic life and business organizations have increased the need for formal forecasts, based upon rational analyses, as guides for business planning. Forecasts of freight traffic are not of recent origin on the Erie, but the estimating methods employed, and some of the uses of the forecasts, are relatively new to us. This new basis for forecasting our freight traffic was inaugurated about 10 years ago. It has proved to have many advantages over methods previously used, including greater accuracy in results.

Company data basic to these forecasts are monthly indexes of daily average freight revenue for selected groupings of commodities comprising total freight traffic. The decision to maintain indexes of revenues rather than tons handled was based on two considerations:

1. Preliminary studies clearly indicated there was a closer relationship of revenues than tons to economic indicators. (These studies also indicated the probability that revenue ton-miles had the closest relationship to economic indicators, but revenue ton-miles were not available by commodity groups.)

2. Simplification of revenue forecast computations.

The commodity groupings found to be most useful for our purpose are:

I. Products of agriculture:
   - A. Grain and grain products;
   - B. Fresh fruit;
   - C. Fresh vegetables; and
   - D. All other products of agriculture.

II. Animals and products:
   - A. Live stock;
   - B. Fresh meats and packing house products;
   - C. Dairy and poultry products; and
   - D. All other animals and products.

III. Coal and Coke:
   - A. Anthracite coal;
   - B. Bituminous coal; and
   - C. Coke.

IV. Other products of mines:
   - A. Ore; and
   - B. All other

V. Products of forecasts.

VI. Petroleum and refined products.

VII. Iron and steel products.

VIII-IX. All other manufacturers and miscellaneous (subdivided into two groups).

X. L.C.L.

The number of days used in computing average daily

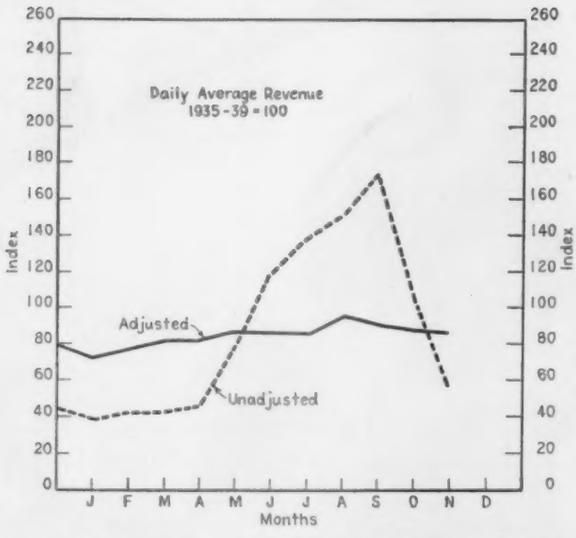



**CHART 1—Erie revenue indexes of fresh fruit, 1952.**

revenue is less than the calendar days for some commodity groups. Calendar days proved satisfactory for the products of agriculture and the animals and products categories (I and II, above) but in other groups it was found necessary to assign different values to Sundays and holidays. (Now that the 40-hour week is in effect in the railroad industry, probably some different value should be assigned to Saturdays.) The total "constructed" days for each group for the years 1935-1939 were divided into the respective gross revenues reported in the regular commodity statistics to the Interstate Commerce Commission for that period and the resulting average revenue per day was taken as a base of 100. These years were selected as a base period primarily because they were the base period for most economic indicators.

Later it was found advisable to revise the base period averages to include Ex Parte increases in freight rates as they became effective and the revised averages used as a new base of 100. If this procedure had not been followed, the indexes computed subsequent to each Ex Parte increase would have been inflated to the extent of such increases and their value as a measure of changes in traffic volume destroyed.

The monthly indexes of average daily revenues are computed by dividing revenues for each group by the constructed days, and the resulting average revenue per day divided by the base period average.

**Table 1—Example of Computation of Revenue Indexes**

| | | Grain and Grain Prods. | Fresh Fruit | Fresh Vegets. | Other Prods. Agriculture | Total Prods. Agri. |
|---|---|---|---|---|---|---|
| 1. | Gross Revenue ... | $374,312 | $197,529 | $133,555 | $163,070 | $868,466 |
| 2. | No. Working Days | 28 | 28 | 28 | 28 | 28 |
| 3. | Daily Avg. Rev. Month (1 ÷ 2) .. | $13,368 | $7,055 | $4,770 | $5,824 | $31,017 |
| 4. | Base Period .... | $10,228 | $14,587 | $3,003 | $3,558 | $31,376 |
| 5. | Unadjusted Index (3 ÷ 4) ..... | 130.7 | 48.4 | 158.8 | 163.7 | 98.9 |
| 6. | Seasonal Adj. Factor (per cent) ..... | 91 | 54 | 130 | 106 | ..... |
| 7. | Adjusted index (5 ÷ 6) ..... | 143.6 | 89.6 | 122.2 | 154.4 | ..... |
| 8. | Base Period Weights (per cent) ..... | 31.90 | 47.21 | 9.65 | 11.24 | 100.00 |
| 9. | Points in Weighted Index (7 x 8) .. | 45.8 | 42.3 | 11.8 | 17.4 | 117.3 |

Seasonal movements of traffic cause, in many instances, a considerable variation in the monthly indexes of a group. To follow the underlying trend it is necessary to eliminate the seasonal influence from these monthly indexes. Many methods were tried for this purpose but the most satisfactory proved to be a modified form of that described in the Federal Reserve Bulletin for June 1941.*

After the seasonal factors have been determined (and these change from time to time) they are divided into the respective unadjusted indexes. The adjusted indexes are then indicative of the annual level of the indexes. (See Chart 1.)

### *Seasonal Factors and Adjusted Indexes*

Seasonal factors and adjusted indexes are computed as described only for the sub-groups—such as A, B, C and D under Group I (products of agriculture) above. The adjusted index for total products of agriculture (or any combination desired) is obtained by weighting the sub-group adjusted indexes according to the relative weight of the revenues of each sub-group to the total in the base period.

Changes in the base period averages to reflect Ex Parte increases in rates also require a simultaneous change in these weights. (Table 1 shows the actual computations in determining the indexes for products of agriculture for February 1951.)

Obviously the revenue indexes for each group must be and were computed for an extended period prior to their use for forecasting purposes. The next step was to ascertain relationships which might exist between any of the trends of our indexes with the trends of any gen-

* "Adjustment for Seasonal Variation," by H. C. Barton, Jr.

**Table 2—Erie Railroad—Indexes of Commodity Group "Fresh Fruit" by Months for the Year 1952**

(1935-39 = 100)

| | Jan. | Feb. | Mar. | Apr. | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Unadjusted ..... | 44.8 | 38.6 | 40.6 | 42.8 | 45.7 | 79.4 | 119.0 | 138.2 | 150.9 | 174.4 | 104.2 | 57.0 |
| Adjusted ..... | 78.5 | 71.5 | 76.5 | 80.7 | 81.6 | 86.3 | 85.6 | 85.3 | 95.5 | 91.3 | 87.5 | 86.4 |

**F.R.B. Index of Industrial Production and Erie Index of "All Other Merchandise Revenue" with Per Cent Variance Erie Index with F.R.B. Index**

(1935-39 = 100)

| | 1935 | 1936 | 1937 | 1938 | 1939 | 1940 | 1941 | 1942 | 1943 | 1944 | 1945 | 1946 | 1947 | 1948 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| F.R.B. Index ..... | 87 | 103 | 113 | 89 | 109 | 125 | 162 | 199 | 239 | 235 | 203 | 170 | 187 | 192 |
| Erie Index ..... | 89 | 110 | 113 | 84 | 105 | 118 | 160 | 195 | 233 | 235 | 214 | 183 | 192 | 190 |
| Percent Variance ..... | +2.3 | +6.8 | 0 | −5.6 | −3.7 | −5.6 | −1.2 | −2.0 | −2.5 | 0 | +5.4 | +7.6 | +2.7 | −1.1 |

eral economic indicators. Many studies were made, the primary value of which turned out to be a better understanding of the trends. Some group indexes such as products of agriculture and animals and products show little change from year to year, and except for sharp changes in general business conditions for rather extended periods, are affected more by crop conditions than the general business picture. Other commodity groupings follow very closely in timing and degree the changes in industrial production.

After considerable experimentation we found a remarkably close relationship between a weighted index of groups IV, V, VIII and IX and the Federal Reserve Board Index of Industrial Production. (See Chart 2.) This composite group represents more than 50 per cent of our freight revenue, excluding coal and coke. It is obvious from Chart 2 that a reasonably accurate forecast of the trend of the index of industrial production should result in an equally accurate forecast of the trend and level of our index for the composite group. Furthermore, it is in this group and the iron and steel group (which moves somewhat in sympathy with it) that the greatest variations in our traffic occur.

It may be argued that it should be as easy and accurate to forecast directly our own composite group index rather than the F.R.B. index first. This is not true, however. In the first method we would be limited to the opinions of a few people in our own company. However, estimates of the F.R.B. index of industrial production are available from outside our company and the railroad industry, and provide a large sample of opinion. We, therefore, have help from many sources that otherwise would not be available to us.

### *Revenue By Months*

Forecasts of revenue by months are prepared regularly toward the end of each year for the ensuing year. Conclusions as to the future trends of the various group indexes are formulated not only from the trend of our own indexes, but from statistical data and reports bearing on industrial, financial, agricultural, transportation and general economic conditions that are regularly available from both governmental and non-governmental sources. All these data are used to forecast adjusted indexes for future months. The adjusted indexes, then, are used to estimate expected revenues. Revisions are made, if necessary, during the year and special forecasts are sometimes made for longer periods.

The mechanics of our forecasting are merely the reverse of the computation of our monthly indexes of revenue. Once the adjusted indexes have been forecast, as mentioned just above, these indexes are multiplied by the base period average daily revenues. This resulting (expected) average daily revenue is then multiplied by the number of constructed working days in the month and this total by the seasonal factor. This produces the estimated revenue for the month.

In making these computations, however, the base period averages have been adjusted to reflect the normal debits made to Account 101—Freight Revenues. This adjustment is based on a study for an extended period of the debits relating to the different commodity groups. A further monthly adjustment also has been found necessary after the sum of all the group estimates has been determined. This is because there is a lag between the revenues included in the freight revenue account and the settlements for such traffic. As the indexes are based upon settlements this lag must be compensated for in the forecast. A disturbing factor in this respect has been evident with the advent of the 40-hour week in the railroad industry. When the month ends on a week-end there is a greater than normal lag of settlements into the succeeding month. This causes a temporary understatement of the current month's indexes and overstatement in the following month and must be discounted in following the trend. These differences are important only in the monthly estimates, of course, and have little if any effect on annual estimates.

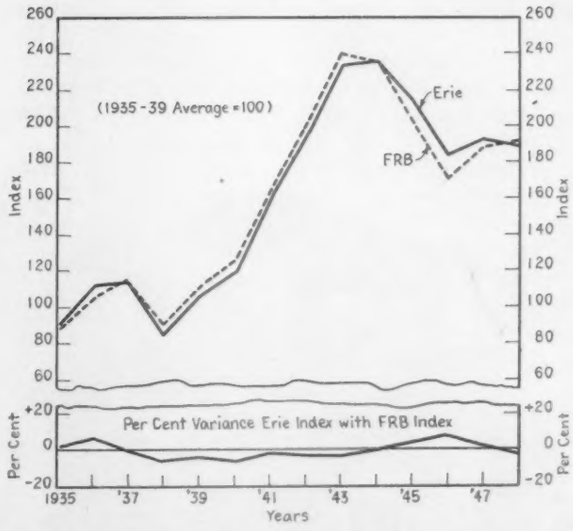



**CHART 2—Federal Reserve Board index of industrial production and Erie index of "all other merchandise revenue."**

Estimates of revenue ton-miles are computed by dividing the total revenue forecast by the estimated revenue per ton-mile. The accuracy of this estimate can be improved by separate computations for each commodity group (or selected groups).

A few advantages of this method of forecasting are worthy of special note:

1. It simplifies the comparison of trends and the measurement of changes in magnitude between periods, commodity groups and economic indicators. Comparisons of raw data are difficult but indexes provide a common denominator that are easily compared.

2. Because the method provides a continuous analysis, forecasts and revisions can be made easily and quickly as required.

3. It has provided a common meeting ground with other industries following similar procedures in their forecasting.

4. It has aided in sales analyses and the determination of sales quotas for traffic agencies.

The reader should be warned, however, that preparation of original material required before any forecasts can be made is no slight task. But once this has been done little time is required to keep it current. In my opinion, the benefits have more than repaid the original effort.

**RADIO-EQUIPPED SWITCH ENGINE has footboard speaker which is used to page switch crew foreman, and enables him to contact the yardmaster.**

## OPERATIONS OF FIVE YARDS . . .

# Coordinated by Radio

**Stations in Omaha and Council Bluffs, with intercom between four offices in Omaha, provide communications between terminal trainmaster, yardmasters and switching crews**

Two radio stations enable the Chicago, Burlington & Quincy terminal trainmaster and yardmasters in the Omaha-Council Bluffs area to communicate with 12 diesel switchers and four yard offices. As a result, overall operations in that area are better coordinated; delays to switching moves, transfer cuts and through freight trains are being reduced; and industries are receiving prompter switching service than prior to use of yard radio.

The Burlington has five yards in the area. In Omaha, Douglas Street yard contains the Burlington freighthouse and is the Omaha interchange point with the Union Pacific. At Gibson yard, westbound freight trains set out cars for Omaha, and eastbound freights pick up Omaha outbound cars for movement eastward. South Omaha yard is the point for setting out Omaha cars from eastbound freight trains, and the pick-up point for westbound Omaha cars. Freight trains originating at Omaha are made up at South Omaha yard for westward movement, and at Gibson yard for eastward movement. At South Omaha, the Burlington has a connection into the Union Stockyards. Switching work done at the Falstaff Brewery and the Ralston Purina plant is known as the "Hill job."

The Council Bluffs yard is an interchange point with the UP and six other railroads. It is also the terminal and originating point for Burlington freight trains. For movement between Omaha and Council Bluffs, the Burlington has trackage rights over the UP.

At Omaha, the base station is a two-channel unit operating on 159.69 mc., Channel A. The radio equipment and antenna are in the Burlington office building at 10th and Farnam streets in downtown Omaha. Remote control units are connected to the transmitter so it may be operated from any one of four locations, namely: the yardmaster's offices at Douglas street, Gibson yard, and South Omaha yard, respectively, and the terminal trainmaster's office in the passenger station. An intercom arrangement is provided between these control units so they may be used between offices without actuating the radio transmitter. This provides interoffice communication independent of the switch engines. An extra control unit is located at the base station for testing purposes.

A second base station is at the yardmaster's office in Council Bluffs, with its control unit in that office. This unit operates on 159.99 mc., Channel B. Control units have channel selection switches.

Locomotives are equipped with footboard talk-back speakers, actuated by knee-operated switches. Thus, a switching crew foreman, on the ground, can hear a yardmaster's questions and instructions. To answer, the foreman goes to the footboard, presses the knee switch and talks into the speaker. The footboard speaker is more convenient to the switch crew foreman than the radio control within the engine cab.

### *How Radio Is Used*

The yard radio is used extensively by yardmasters for keeping in contact with switching crews and keeping them informed of the work they are to perform. When they have finished the work assigned, they call in for instructions. Some switching crews leave the yard offices at 8 a.m. and do not return until 4 p.m.

On a typical day, three engines were assigned to the Council Bluffs yard, two to Douglas Street yard, two to Gibson yard, one to the passenger station, two to "Hill jobs," one to South Omaha yard, and one to Ft. Crook and the stockyards. The "Hill jobs" customarily leave the yard office (Douglas street or Gibson) at 8 a.m. and do not return until 4 p.m., unless an industry wants cars pulled for an afternoon train. These "Hill jobs" usually have two hours of work assigned first thing in the morning. This stint done, they call the yardmaster for further instructions.

A "Hill job" crew working out of Douglas street receives a call on the radio: "Douglas street yardmaster to Engine 9242."

"Engine 9242 to Douglas street yardmaster. Come in."

"Allied Mills wants a 'switch' in 10 minutes."

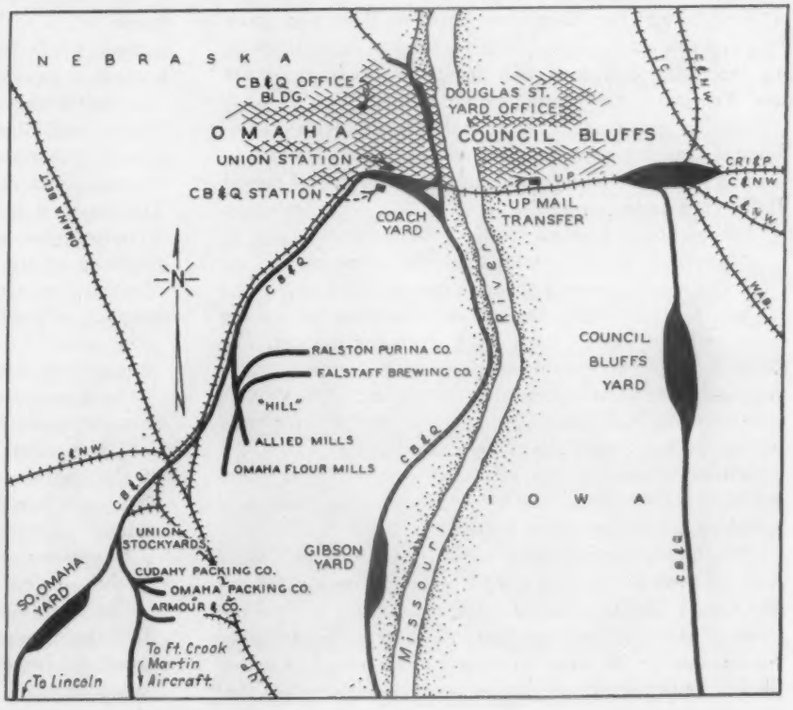
"O.K.! We got it."

The "switch" was taken care of promptly. Allied Mills had called the Douglas Street yardmaster and asked for the switch (switching of cars, spotting empties and loads). He called the crew by radio. Without radio, the yardmaster would have had to use the telephone to call industries in the Hill area, to locate the switching crew and give them the message. The chances are it would have taken more than 10 minutes for the yardmaster to locate the crew.

Driving to the area in his car and looking for the engine would have taken even longer. Probably the 10-minute switch would not have been made. In some instances, before radio, crews, after finishing their two hours of work, either called in by telephone to the yardmaster, or returned to the yard. This was often needless doubling.

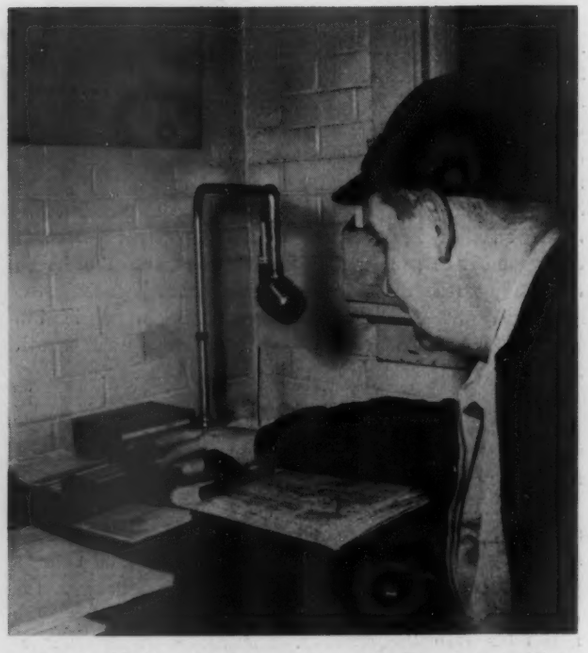
Many times a day industries call the yardmaster asking for a "switch," or "we need two empty reefers"; or "an extra box car." Their requests receive prompt action because the yardmaster can communicate instantly with his switching crews.

Radio has reduced delays to switching crews going to




**LOCATIONS of Burlington yards and switching areas in Omaha and Council Bluffs.**

**ENGINEMAN uses radio in his locomotive cab to hold a conversation with a yardmaster in his office, which may be up to five miles away.**



**YARDMASTER calls engine via radio. Board on wall in front of him holds tags showing the locations of switch engines.**

and from the Hill, from Gibson yard or Douglas street. From these points, the crews pass through the passenger station and coach yard. When switching crews are going to pass through the station on the way to or returning from the Hill, they notify the depot's switcher by radio. Thus informed, the depot switching crew can keep one track clear for the Hill crew. However, if a passenger train is being switched in the station, the depot crew may say to the Hill crew:

"Engine 9144 calling Engine 9141."

"Engine 9141 to Engine 9144, come in."

"We'll be another 10 minutes here. We'll let you know when you can get through." When a track is clear, through the depot, the Hill crew will hear: "We're in the clear now. You can come through on six (track No. 6)."

Transfer moves are better coordinated with radio. When a transfer move is planned—say from Omaha to Council Bluffs—the terminal trainmaster calls Council Bluffs yardmaster by radio.

"Beebe calling Council Bluffs yardmaster."

"Council Bluffs yardmaster to Beebe, come in."

"We're sending over a transfer cut at 2 o'clock."

Thus, Council Bluffs has advance information on the move and can have a yard track open for the cut. The Council Bluffs yardmaster can inform the terminal trainmaster the yard track to use for the cut. But if he doesn't have one available until just prior to the transfer cut's arrival, he can notify the crew by radio.

Besides increasing the efficiency of switching movements, radio also has been helpful in reducing delays in getting road freight trains into yards. Road freight locomotives are equipped with radio operating on 159.69 mc., Channel A. When a road freight approaches Omaha or Council Bluffs, the crew calls in by radio to find out what yard track they are to pull in on. The terminal trainmaster or the local yardmaster concerned (Council Bluffs, South Omaha or Gibson yard) can give them that information. Also, the yardmaster may inform the road train crew of cars they are to pick up or set out. Thus, the road train can pull in on the right track, stopping only to throw the necessary switches. Without yard radio, the road train had to stop, and a crew member go to a telephone, call the yardmaster and find out what track to pull in on.

### *Radio Equipment*

The radio equipment is conventional VHF Westinghouse FE. The local control units for the Omaha and Council Bluffs base stations consist of a handset, control console with volume control, channel selection switch and loudspeaker. Control units at Douglas street, South Omaha and Gibson yard offices are identical; they consist of a handset and a console with speaker, volume control, intercom switch and channel selection switch. The terminal trainmaster, at the passenger station, has a control console with a built-in speaker, volume control, intercom switch, channel selection switch, a transmitter disabling switch and microphone. The trainmaster can keep unauthorized persons from broadcasting over the yard radio by depressing the disabling switch. This actions puts the transmitter "off the air."

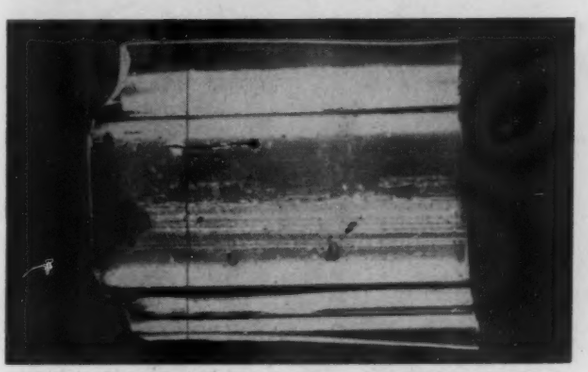
The locomotive radio is also Westinghouse FE, horizontally mounted on the engine hood in front of the cab. The control unit with handset is mounted in front of the engineman under the front window in the cab. This unit has a volume control and channel selection switch.

A speaker is mounted over the cab window, and another one on the hand rail over the footboards.

The radio installation was planned and installed by Burlington forces, under the jurisdiction of T. W. Wigton, superintendent, radio-communications, and E. F. Hutchinson, assistant communications engineer.

## CHROME-MANGANESE AND 18-8 STEELS . . .

# How They Resist Corrosion



**TYPICAL CORROSION PIT starting from the inside of a corrugated 18-8 stainless-steel roof section of a Santa Fe lightweight passenger car after nine years' service.**

**A CORRODED STEEL GIRDER SHEET of a Santa Fe lightweight passenger car after removing an 18-8 steel fluted side panel.**

Since restrictions were placed on use of nickel by United States government agencies, the Budd Company has been using a chrome-manganese austenitic steel as a substitute for 18 per cent chromium, 8 per cent nickel stainless steel. This steel, designated by Budd as TRC (T for trailer, R for railway, and C for car), permits use of the same forming and welding techniques, procedures and equipment as are used in fabricating chromium-nickel austenitic steels (A.I.S.I. Types 301 and 302) in both flat rolled stock and structures. Yield strengths in TRC are slightly higher than in the nickel steels for a given tensile strength in all tempers. Elongation values tend to be slightly lower, annealing hardness is somewhat higher and structural tests indicate slight superiority over the chrome-nickel steels.

One characteristic of the TRC steel, in comparison with chrome-nickel stainless steels, which remained to be determined was its resistance to corrosion, both atmospheric and chemical. At the fourth railroad corrosion conference of the International Nickel Company, held at Wrightsville Beach, N.C., May 19 to 21, three papers were presented which set forth the results of tests to determine the relative corrosion resistance of the two types of steel. These were by C. B. Allen, chief metallurgist, Budd Company; by E. E. Chapman, mechanical assistant, research and engineering, Atchison, Topeka & Santa Fe, and by G. A. Lux, Oakite Company.

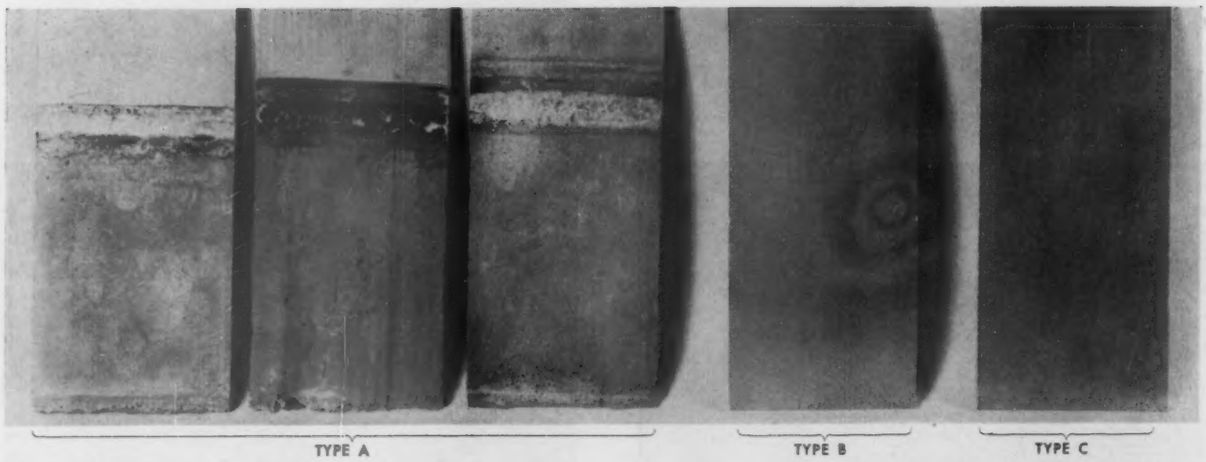
Mr. Allen's paper records the results of approximately one year's testing in the laboratories of the Budd Company, the Union Carbide & Carbon Co., and the Allegheny Ludlum Steel Corporation, as well as those in the atmospheric exposure stations of Union Carbide at Niagara Falls, N.Y., and New York City; the International Nickel Company at Kure Beach, N.C., and of Budd at its Hunting Park and Red Lion plants at Philadelphia.

The laboratory tests indicate the TRC steel to be 90 to 95 per cent as corrosion resistant as Type 301 chrome-nickel steel. These tests included immersion in solutions of strong chemicals, both at elevated and room temperatures; in salt sprays, and currently in alternate and continuous immersion in proprietary car-washing preparations. In some of these tests the performance of TRC has been the equal of 17-7 steel (Type 301). Cold nitric, phosphor and acetic acids, and potassium hydroxide, sodium sulphate and aluminum sulphate left both steels unattacked. In chloride solutions and in boiling nitric acid TRC was somewhat more vulnerable than 17-7. Hence, the incidence of rusting in 20 per cent salt spray occurred earlier in the TRC than in Type 301.

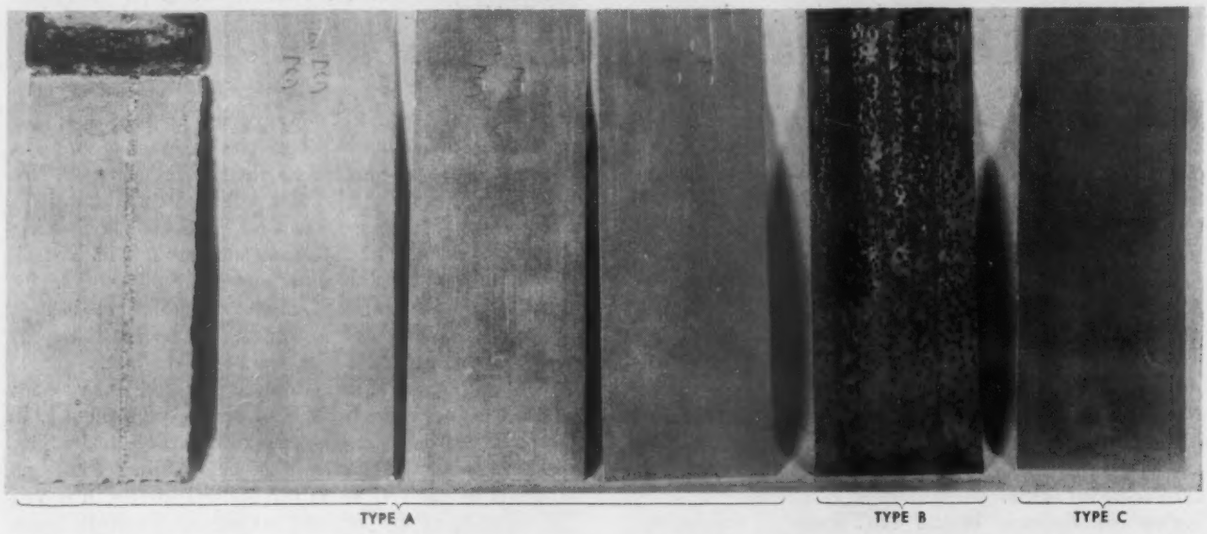
The reliability of this test is questioned by many authorities, however, because of erratic performance. In the stress-corrosion test no cracks occurred in the TRC specimen after 480 hr., while early failure (20 hr.) occurred in the 17-7 steels run simultaneously in a boiling solution of 42 per cent magnesium chloride. Some edge corrosion was noted in the TRC specimen, while none was observed in the 17-7 test pieces.

In the atmospheric exposure tests Mr. Allen's appraisal is based on photographs and written descriptions of the panels at Kure Beach, Niagara Falls, and New York City. The appearance of the panels in the photographs of both TRC and Type 302 (18-8 stainless steel) panels at the International Nickel Company's lots, 80 and 300 ft., respectively, from the beach, appear comparable;

**CORRODED CONDITION of steel sub floor in kitchen of a Santa Fe lightweight diner after 11 years' service.**




**RESULTS of Santa Fe intermittent immersion tests of TRC specimens in cycles of 30 min. in and 30 min. out for 9 hr. and continuous immersion for 15 hr. for a period of 15 days in three 6-oz.-per-gal. cleaning solutions. Three tests in Type A solution showed similar results. Samples tested in Type B and C solutions were neither darkened nor corroded. Type 302 steel samples (not shown) were unaffected by any of the solutions.**




**CONTINUOUS IMMERSION TESTS of TRC specimens for 15 days in the three car-cleaner solutions. The left sample immersed in Type A was not completely submerged. Type B caused edge corrosion and severe pitting. Type C caused no evidence of corrosion. Type 302 specimens (not shown) were unaffected by the three solutions.**

the TRC panels, after cleaning with light abrasive, are said to be slightly stained and lightly etched.

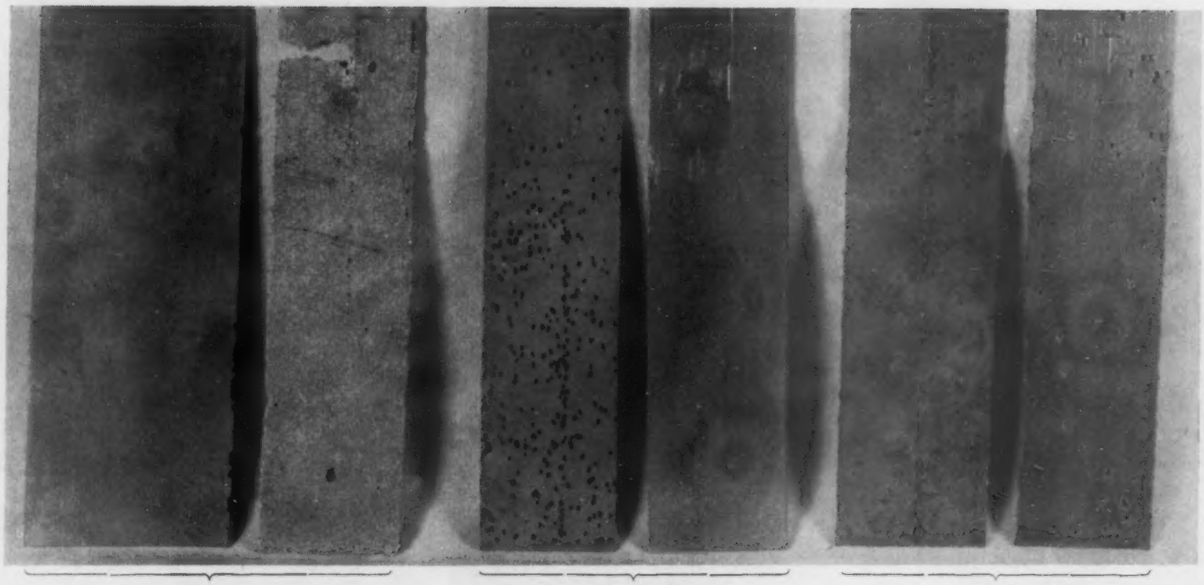
Personal examination of the specimens at Kure Beach confirmed these observations with respect to the lot 800 ft. from the beach. In the lot 80 ft. from the beach, however, the TRC suffered more than the nickel-bearing steel. Both steels were rusty in both exposures.

The TRC samples in the panels at Niagara Falls, in an atmosphere containing chlorine and hydrochloric acid gases, showed somewhat greater vulnerability than companion pieces of Type 304. Neither steel is immune in this severe atmosphere. Many perforations of Type 301 have been observed in the presence of these gases.

In exposures at New York City, with a more typically urban atmosphere, TRC is only slightly less resistant than Type 304.

At the Budd Hunting Park exposure, dirt and smog, characteristic of an industrial environment, have accumulated on the panels. When washed off under tap water the original mill finished surfaces were restored with no evidence of etching or pitting. At the Budd Red Lion plant, the nearly rural atmosphere has left the precleaned (with nitric acid) surfaces untouched. The TRC samples are indistinguishable from the Type 301.

Mr. Allen also reports that tests on proprietary car-cleaning materials are being conducted. Both acid and alkaline cleaners at the maximum vendor-recommended concentration have been tested by alternate 1-min. immersing, 24-hr. drying of specimens of TRC, Type 301, and a TRC-Type 301 combination consisting of a corrugated section welded to a flat back-up panel. The following observations were made: (1) Three acid cleaners tested are unsatisfactory, causing etching and darkening both of TRC and 301. The attack was most severe on the contacting surfaces. (2) The three alkaline cleaners tested are completely satisfactory, producing no darkening or etching either on TRC or 301. (3) The ratio of one acid cleaning to four alkaline cleanings gave satisfactory results. Very superficial staining occurred on contacting surfaces of TRC and 301.




**RESULTS of continuous immersion tests of TRC specimens in the same containers with Type 302 stainless-steel specimens, but not touching, for 15 days. Type 302 specimens (not shown) were discolored but not corroded.**

Mr. Chapman described a series of comparative tests of samples of TRC and 18-8 stainless steel (Type 302) in three cleaning solutions designated as Types A, B, and C. He also presented examples of corrosion pitting starting from the inside of Type 302 stainless-steel corrugated roof sections, as well as a number of examples of severe corrosion of high-strength, low-alloy structural members under stainless-steel fluted side panels.

The pitting of the 18-8 stainless started on roof surfaces adjacent to insulations which were covered with a flame-proof muslin, and a flame-retardant plastic. Chemical analysis revealed that the muslin covering was impregnated with magnesium chloride and the flame-retardant plastic contained ammonium chloride, both of which are corrosive to stainless steel. This was remedied by spraying inside stainless-steel surfaces with Dednox or Insulmat and using insulation covered with asbestos.

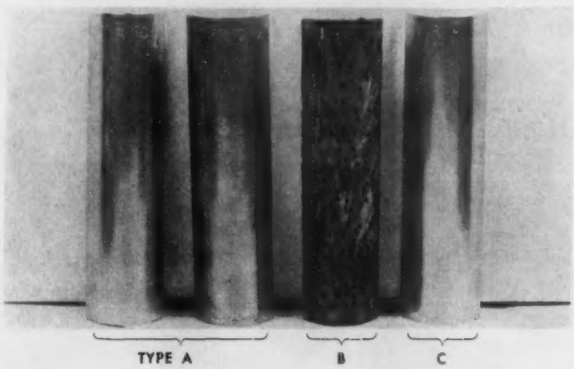
The cases of corrosion of high-strength low-alloy steel structures were attributed to the leakage of moisture. In the case of a dining-car floor structure the moisture was laden with salt from an ice-cream compartment.

With respect to the cleaning-solution tests, Mr. Chapman said the results of the various tests presented are somewhat inconclusive regarding the corrosion action that can be expected with the use of TRC stainless steel for lightweight car construction when subjected to the cleaning solutions normally used for cleaning Type 302 stainless-steel cars. The data developed caused the Santa Fe to view the new substitute stainless steel with skepticism as to its ability to resist cleaning-solution attack. Various companies are now seeking a cleaner that will be non-corrosive to TRC.

## Chemical Analysis of Stainless Steels*

| Per cent: | A.I.S.I. 301 | A.I.S.I. 302 | A.I.S.I. 304 | A.I.S.I. 430 | TRC |
|---|---|---|---|---|---|
| Carbon | Over 0.08/0.20 | Over 0.08/0.20 | 0.08 max. | 0.12 max. | 0.12 max. |
| Manganese, max. | 2.00 | 2.00 | 2.00 | 1.00 | 14.00/19.00 |
| Chromium | 16.00/18.00 | 17.00/19.00 | 18.00/20.00 | 14.00/18.00 | 15.00/18.00 |
| Nickel | 6.00/8.00 | 8.00/10.00 | 8.00/11.00 | .... | 1.00 max. |

*These are the steels to which reference is made in the text of this article.




**CORROSION RESULTS of continuous immersion tests of formed TRC specimens were practically the same as with non-formed flat specimens.**

Mr. Lux described accelerated corrosion tests conducted in Oakite's research laboratory to determine the effect of Oakite Compound No. 88 on TRC stainless-steel. Earlier tests were conducted to determine its suitability for use on the nickel-chromium stainless steels. These tests, which are still being carried on, were conducted with TRC samples of three surface conditions: Condition A, degreased as received; Condition B (activated condition), further treated by immersion in a 15 per cent concentrated hydrochloric acid solution at room temperature, and Condition C (passivated condition), immersed in a 20 per cent nitric-acid solution. In these tests TRC samples with surface conditions A and B were attacked, while surface condition C was not.

In conclusion, Mr. Lux said samples of the TRC from several manufacturers are being used to run duplicate tests and that the research laboratory is actively working on formulation of a new acidic cleaning material that will have the equivalent detergent action of 88 but will not have its deleterious effects on TRC stainless steel as were found in the accelerated corrosion tests.

**WHEEL LOADS of diesel locomotives, being generally more uniform than those of steam power, may presumably be higher without developing excessive rail stresses, but these higher loads are repeated more frequently at any point in the track structure than are the maximum loads of steam power, which reach a maximum only once in every wheel revolution.**

FOR NEW OR REHABILITATED LINES . . .

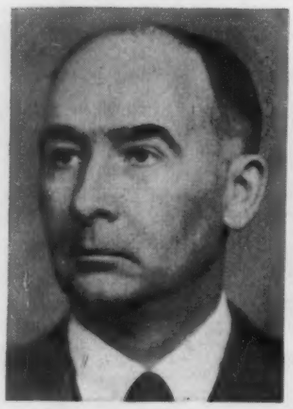
# What Weight of Rail?

**Selection of proper section should give consideration to axle loads, to the physical characteristics of line, and to the nature and speed of traffic to be handled over it**

**By C. J. CODE**
Engineer of Tests, M.W.
Pennsylvania

The principal features to be considered in selection of weight of rail for a new or rehabilitated line will be: (1) The type and axle loading of motive power and cars; (2) the physical characteristics of the line; and (3) the type, intensity and speed of traffic. Given these controlling factors, a reasonable decision should be possible, which will result in minimum annual total cost of maintenance with a satisfactory condition of line and surface.

It is assumed that a decision has already been reached as to the type of locomotives and cars which will be used. With information as to the axle loading and spacing of axles, a calculation may be made of



C. J. Code

the maximum bending moment to be carried by the rail for several assumed rail sections and assumed values of the modulus of elasticity of track support.* This involves a further assumption as to the type of ballast to be used.

In making this calculation for diesel locomotives, no information is needed for the locomotive other than the axle loading and spacing. For steam locomotives a chart should be prepared showing the combined downward forces on the main drivers due to centrifugal force (dynamic augment), main rod thrust due to steam, and main rod thrust due to the inertia of reciprocating parts. These forces should be combined with the static loading and considered in relation to the static and dynamic loading on the other wheels of the locomotive in order to arrive at a close approximation of the maximum bending moment due to the locomotive.

### *Stress Calculations*

The bending moment or the bending stress arrived at by this calculation should be increased by 50 per cent to allow for impact and the resultant stress should be not more than 35,000 p.s.i. Several rail sections will probably meet this requirement. Assuming that 75 per cent of this bending moment will be carried by the joint bars, a calculation should be made of bending stress in the bars. A combination of rail section and joint-bar section which gives a bending stress of 45,000 p.s.i. or less in the joint bars, and 35,000 p.s.i. or less in the rail, including impact, should be considered as satisfactory from a stress analysis point of view.

Nothing has been said above about the stress condition under cars. With ordinary types of cars and lading, the cars are a secondary factor in rail stresses; however, if the type of traffic includes special cars with heavy axle loads, a calculation of rail stress should be made for these as well as for the locomotives.

The working stress of 35,000 p.s.i., used above for rail, gives a factor of safety of approximately two with respect to the yield point of rail steel, and is also close to the fatigue endurance limit of such steel when not in the presence of excessive corrosion. It will be noted that this factor of safety must also take care of any loss in section of the rail due to wear on the head. The working stress of 45,000 p.s.i. is admittedly high, but by comparison with present practice gives reasonable results. A lower working stress should give longer joint-bar life.

The factor of 50 per cent for impact is more or less of a generalization and takes into account not only true impact, but other variations in the wheel load from the nominal amount due to irregularities in track surface, superelevation on curves, irregular action of spring rigging, wheel-tread condition, etc. It has been found from practical experience, including stress measurements, to be a reasonably close assumption.

Wheel loads of diesel locomotives are generally more uniform than those of steam. Dynamic augment is not a factor in connection with them, so that presumably a higher static load may be permitted without the development of excessive rail stresses. It must be recognized, however, that these higher loads are repeated more frequently at any point in the track structure than are the maximum loads from a steam locomotive, which, being due to combined static and dynamic loading, reach their maximum only once in every wheel revolution. From the point of view of fatigue or repeated stress, it may thus be found, on branch lines with light rails, that the diesel locomotive with a wheel load of 30,000 lb. may cause more rail damage than a steam locomotive with a wheel load of 27,000 lb. static, but with a combined static and dynamic load approaching 45,000 lb. or more.

We have not considered such factors as web stress and concentrated pressures on the rail head. Web stress is principally a matter of good rail design. Concentrated pressures on the rail head are present and damaging regardless of the rail section and can only be controlled by proper relationship between wheel diameter and load.

The above considerations will indicate the minimum rail section which may be used without fear of excessive rail or joint-bar failures, and without excessive joint deflection. Let us say that, based on the above calculations, it is found that any rail section 115 lb. and over will be satisfactory. Considerations of alinement and other physical characteristics and of traffic may indicate that a section heavier than 115 lb. will be desirable.

### *Physical Characteristics*

If the alinement includes many curves 3 deg. and over, curve wear will be a factor in rail replacements and a rail with a heavy head will be more desirable than one of the sections with a thin head.

If the grades are such that there will be a considerable amount of helper service, this should be taken into account, as the frequent locomotive movements will wear out the rail and break down the surface more rapidly than otherwise.

No doubt, on the projected line, all possible precautions will be taken to give good subgrade conditions, but if there are soft spots remaining which cannot be cured, they should be taken into account in determining the rail section, as a rail with more girder strength will carry the track with less deflection across the poor subgrade.

The type of ballast available on an economic basis

*Method given in Timoshenko, Strength of Materials, Vol. 2, pp. 1 to 11. Values of K=2,000 or 2,500 for stone have been used with reasonable results.

## Prize-Winning Paper

**This article was one of seven papers submitted to the VIII Pan American Railway Congress on Subject No. 10, "Features in the Selection of Weight of Rail for New or Rehabilitated Lines." It was selected by the congress' prize jury as the best paper in this group, a distinction which carries with it a prize of $1,000 for the author. The prize was donated by the United States Steel Corporation. Certificates were awarded the prize winners at Atlantic City on June 25, at a luncheon which terminated a two-week meeting of the congress.—*Editor.***

is an important factor in determining the modulus of elasticity of the track support. If only a poor quality of ballast is available, it may be necessary to use a heavier rail in order better to spread the load on the ballast.

### *Traffic Type and Volume*

The density, speed and character of traffic will constitute the final factor in determining what weight of rail shall be used. For densities of traffic up to 10,000,000 gross tons annually, rail weighing 115 lb. per yard should be adequate. For densities of traffic between 10,000,000 and 20,000,000 gross tons annually, one of the sections weighing in the vicinity of 130 lb. per yard, such as the 132 RE or 133 RE section, should be chosen. For densities of traffic from 20,000,000 to 35,000,000 gross tons annually, or in territory where there are many sharp curves with traffic of 10,000,000 to 20,000,000 gross tons annually, 140-lb. rail will give better results. If the traffic exceeds 35,000,000 gross tons it is probable that 155-lb. rail will be found economical.

The above assumes combined freight and passenger traffic to be handled at relatively high speeds, say 50 to 60 m.p.h. for freight and 70 to 80 m.p.h. for passenger trains.

If passenger traffic is not present, or if it is of such character that it may be handled at low speed, say 50 m.p.h., the rail section assigned above to the next lower grade of traffic can be used, although if the traffic exceeds 40,000,000 gross tons annually, it will probably be found economical to use 155-lb. rail even without passenger traffic. If the line is short or conditions otherwise are such that the freight traffic may be handled at very low speeds, such as 15 m.p.h., it will be possible to drop down another step in the scale of tonnages. Under such conditions very little attention need be paid to line and surface; the hazard of serious accident due to derailment is relatively small and traffic interruptions due to broken rails or joint bars will be of relatively little importance.

We assigned no place in our scale to 100-lb. or 90-lb. rail, both of which sections are still available and still purchased on some lines in this country. In stepping down the scale to take account of lower speeds and lower classes of traffic, as indicated above, these two sections should take their place relatively below the 115-lb. section. However, in any case where consideration is being given to use of 100-lb. or 90-lb. rail, the possible consequences in excessive stressing of joint bars where heavy modern motive power is used, should be given serious consideration. In most cases, with modern motive power, rails lighter than 115 lb. per yard will be found to give, theoretically at least, excessive joint-bar stresses if not excessive rail stresses.

There may well be cases on lines carrying heavy or high-speed passenger traffic where the use of a rail section one, or even two, steps up the scale from the section indicated by the traffic volume may be justified, in order to give the desired stability of line and surface. Such a decision will undoubtedly be based on experience in handling such traffic on existing lines.

This discussion presupposes that new rail must be purchased for the line in question. If this line is part of an existing railroad, from which cropped or other relayer rail may be drawn, the decision as to the rail section to be used in the proposed line will be weighed by considerations as to the type and condition of relayer rail available. The decision as to section, and as to the use of new or relayer rail, will then be based on a comparison with the results obtained on existing lines of similar traffic.

The principles set forth are intended to apply primarily to selection of rail for new or rehabilitated lines, as the title indicates. With respect to existing lines now under operation, experience will be the governing factor, although, if it is proposed to run new motive power or cars with heavier axle loads over an existing line with light rail, a stress calculation should be made and consideration given to the possible results of such operation.

**CURVE WEAR will be a factor in rail replacement if the alinement includes many curves of 3 deg. and over. In such situations a rail section with a heavy head will be more desirable than one with a thin head.**

# Railroad Buying Continues Steady

**Gradual upward swing in purchases of manufactured items in first five months; rail and equipment orders also up slightly from 1952 figures, but dollar volume of fuel purchases is down**

Railroad purchases of materials, supplies and fuel in the January-May period this year, plus the estimated value of equipment orders, totaled $1,029,900,000, slightly below last year's figure for the same months. This was in spite of increases in equipment orders and in buying of manufactured products in general.

Purchases of manufactured products have been inching upward slightly, month by month, except for a slight setback in February. But since May buying from manufacturers was only about $15 million more than was spent for similar items in January the rise is not very spectacular. Fuel purchases on the other hand, are down substantially from 1952. In small part this would seem to be due to price decreases in diesel fuel. But the principal causes probably were reduced traffic (through May), which cut the carriers' needs for fuel, and the fact that built-up stocks make it less necessary for the roads to buy fuel in periods when traffic may fall off slightly.

**1953 RAILWAY PURCHASES***

| | May (000) | Five Months Totals 1953 (000) | Five Months Totals 1952 (000) |
|---|---|---|---|
| Equipment** | $ 14,098 | $239,583 | $234,505 |
| Rail | 9,112 | 47,311 | 37,241 |
| Crossties | 9,336 | 39,830 | 45,455 |
| Other Material | 108,093 | 505,042 | 485,918 |
| Total from Manufacturers | $140,639 | $831,766 | $803,119 |
| Fuel | 34,358 | 198,134 | 245,430 |
| Grand Total | $174,997 | $1,029,900 | $1,048,549 |

*Subject to revision

**Amount placed on order

• • • • • • • • • • • • •

**MAY* PURCHASES OF MANUFACTURED GOODS (Excl. Equip. & Fuel)**

| Year | May '53 Compared to Other Mays (000) Amt. | % Change |
|---|---|---|
| 1947 | $105,379 | +20 |
| 1948 | 105,076 | +20 |
| 1949 | 102,473 | +23 |
| 1950 | 98,328 | +29 |
| 1951 | 145,093 | —13 |
| 1952 | 111,982 | +13 |
| 1953 | 126,541 | |

| Month | May '53 Compared to Other Months '52 and '53 (000) Amt. | % Change |
|---|---|---|
| Jan. '52 | $113,960 | +11 |
| Apr. '52 | 116,843 | + 8 |
| Jan. '53 | 111,071 | +14 |
| Feb. '53 | 107,658 | +18 |
| Mar. '53 | 123,233 | + 3 |
| Apr. '53 | 123,680 | + 2 |
| May '53 | 126,541 | |

| Year | Five Months Totals '53 And Other Years (000) Amt. | % Change |
|---|---|---|
| 1947 | $503,334 | +18 |
| 1948 | 536,008 | +10 |
| 1949 | 539,412 | +10 |
| 1950 | 417,439 | +42 |
| 1951 | 674,262 | —12 |
| 1952 | 568,614 | + 4 |
| 1953 | 592,183 | |

**MAY* PURCHASES OF RAIL**

| Year | May '53 Compared to Other Mays (000) Amt. | % Change |
|---|---|---|
| 1947 | $ 6,972 | +31 |
| 1948 | 6,841 | +33 |
| 1949 | 9,868 | — 8 |
| 1950 | 10,106 | —10 |
| 1951 | 9,431 | — 3 |
| 1952 | 6,747 | +35 |
| 1953 | 9,112 | |

| Month | May '53 Compared to Other Months '52 and '53 (000) Amt. | % Change |
|---|---|---|
| Jan. '52 | $ 8,146 | +12 |
| Apr. '52 | 7,169 | +27 |
| Jan. '53 | 10,102 | —10 |
| Feb. '53 | 7,934 | +15 |
| Mar. '53 | 10,677 | —15 |
| Apr. '53 | 9,486 | — 4 |
| May '53 | 9,112 | |

| Year | Five Months Totals '53 And Other Years (000) Amt. | % Change |
|---|---|---|
| 1947 | $35,271 | +34 |
| 1948 | 37,095 | +28 |
| 1949 | 47,179 | —— |
| 1950 | 40,960 | +16 |
| 1951 | 41,523 | +14 |
| 1952 | 37,241 | +28 |
| 1953 | 47,311 | |

**MAY* PURCHASES OF CROSSTIES**

| Year | May '53 Compared to Other Mays (000) Amt. | % Change |
|---|---|---|
| 1947 | $8,441 | +11 |
| 1948 | 6,137 | +52 |
| 1949 | 7,669 | +22 |
| 1950 | 5,197 | +80 |
| 1951 | 8,333 | +12 |
| 1952 | 9,706 | — 4 |
| 1953 | 9,336 | |

| Month | May '53 Compared to Other Months '52 and '53 (000) Amt. | % Change |
|---|---|---|
| Jan. '52 | $8,289 | +13 |
| Apr. '52 | 9,467 | — 1 |
| Jan. '53 | 7,281 | +28 |
| Feb. '53 | 6,506 | +43 |
| Mar. '53 | 8,006 | +17 |
| Apr. '53 | 8,701 | + 7 |
| May '53 | 9,336 | |

| Year | Five Months Totals '53 And Other Years (000) Amt. | % Change |
|---|---|---|
| 1947 | $40,107 | — 1 |
| 1948 | 28,211 | +41 |
| 1949 | 37,597 | + 6 |
| 1950 | 22,307 | +79 |
| 1951 | 33,686 | +18 |
| 1952 | 45,455 | —12 |
| 1953 | 39,830 | |

*Subject to revision.

## MAY* PURCHASES OF OTHER MATERIAL

| May '53 Compared to Other Mays (000) | | | May '53 Compared to Other Months '52 and '53 (000) | | | Five Months Totals '53 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Year | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| 1947 | $ 89,966 | +20 | Jan. '52 | $ 97,525 | +11 | 1947 | $427,956 | +18 |
| 1948 | 92,098 | +17 | Apr. '52 | 100,207 | + 8 | 1948 | 470,702 | + 7 |
| 1949 | 84,936 | +27 | Jan. '53 | 93,688 | +15 | 1949 | 454,636 | +11 |
| 1950 | 83,025 | +30 | Feb. '53 | 93,218 | +16 | 1950 | 354,172 | +43 |
| 1951 | 127,329 | —15 | Mar. '53 | 104,550 | + 3 | 1951 | 599,053 | —16 |
| 1952 | 95,529 | +13 | Apr. '53 | 105,493 | + 2 | 1952 | 485,918 | + 4 |
| 1953 | 108,093 | | May '53 | 108,093 | | 1953 | 505,042 | |

## MAY* PURCHASES OF FUEL

| May '53 Compared to Other Mays (000) | | | May '53 Compared to Other Months '52 and '53 (000) | | | Five Months Totals '53 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Year | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| 1947 | $52,469 | —35 | Jan. '52 | $55,415 | —38 | 1947 | $278,726 | —29 |
| 1948 | 72,968 | —53 | Apr. '52 | 45,426 | —24 | 1948 | 343,820 | —42 |
| 1949 | 52,615 | —35 | Jan. '53 | 45,020 | —24 | 1949 | 283,828 | —30 |
| 1950 | 48,648 | —29 | Feb. '53 | 40,060 | —14 | 1950 | 239,658 | —17 |
| 1951 | 49,760 | —31 | Mar. '53 | 40,583 | —15 | 1951 | 278,846 | —29 |
| 1952 | 40,048 | —14 | Apr. '53 | 38,113 | —10 | 1952 | 245,430 | —19 |
| 1953 | 34,358 | | May '53 | 34,358 | | 1953 | 198,134 | |

## MAY* TOTAL PURCHASES (Excl. Equip.)

| May '53 Compared to Other Mays (000) | | | May '53 Compared to Other Months '52 and '53 (000) | | | Five Months Totals '53 And Other Years (000) | | |
|---|---|---|---|---|---|---|---|---|
| Year | Amt. | % Change | Month | Amt. | % Change | Year | Amt. | % Change |
| 1947 | $157,848 | + 2 | Jan. '52 | $169,375 | — 5 | 1947 | $782,060 | + 1 |
| 1948 | 178,044 | —10 | Apr. '52 | 162,269 | — 1 | 1948 | 879,828 | —10 |
| 1949 | 155,088 | + 4 | Jan. '53 | 156,091 | + 3 | 1949 | 823,240 | — 4 |
| 1950 | 146,976 | + 9 | Feb. '53 | 147,718 | + 9 | 1950 | 657,097 | +20 |
| 1951 | 194,853 | —17 | Mar. '53 | 163,816 | — 2 | 1951 | 953,108 | —17 |
| 1952 | 152,030 | + 6 | Apr. '53 | 161,793 | — 1 | 1952 | 814,044 | — 3 |
| 1953 | 160,899 | | May '53 | 160,899 | | 1953 | 790,317 | |

## MAY* INVENTORIES OF RAIL

| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $26,875 | +63 | Jan. 1, | '52 | $41,981 | + 4 |
| | 1948 | 31,911 | +37 | Apr. 1, | '52 | 48,027 | — 9 |
| | 1949 | 41,264 | + 6 | Jan. 1, | '53 | 35,476 | +23 |
| | 1950 | 38,941 | +12 | Feb. 1, | '53 | 39,325 | +11 |
| | 1951 | 42,416 | + 3 | Mar. 1, | '53 | 42,395 | + 3 |
| | 1952 | 45,234 | — 3 | Apr. 1, | '53 | 43,102 | + 2 |
| | 1953 | 43,752 | | May 1, | '53 | 43,752 | |

## MAY* INVENTORIES OF CROSSTIES

| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $ 89,906 | +31 | Jan. 1, | '52 | $104,090 | +14 |
| | 1948 | 92,711 | +27 | Apr. 1, | '52 | 115,100 | + 3 |
| | 1949 | 101,641 | +16 | Jan. 1, | '53 | 110,135 | + 7 |
| | 1950 | 99,118 | +19 | Feb. 1, | '53 | 113,813 | + 4 |
| | 1951 | 92,275 | +28 | Mar. 1, | '53 | 116,024 | + 2 |
| | 1952 | 113,417 | + 4 | Apr. 1, | '53 | 115,998 | + 2 |
| | 1953 | 118,183 | | May 1, | '53 | 118,183 | |

## MAY* INVENTORIES OF OTHER MATERIAL

| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $535,071 | +16 | Jan. 1, | '52 | $683,203 | — 1 |
| | 1948 | 603,972 | + 3 | Apr. 1, | '52 | 693,504 | —10 |
| | 1949 | 642,872 | — 3 | Jan. 1, | '53 | 624,671 | — 1 |
| | 1950 | 520,845 | +19 | Feb. 1, | '53 | 622,333 | —— |
| | 1951 | 624,097 | — 1 | Mar. 1, | '53 | 625,576 | — 1 |
| | 1952 | 694,178 | —11 | Apr. 1, | '53 | 629,952 | — 1 |
| | 1953 | 620,952 | | May 1, | '53 | 620,952 | |

## MAY* INVENTORIES OF SCRAP

| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $12,766 | +48 | Jan. 1, | '52 | $22,374 | —16 |
| | 1948 | 16,217 | +16 | Apr. 1, | '52 | 19,348 | — 2 |
| | 1949 | 17,936 | + 5 | Jan. 1, | '53 | 19,194 | — 2 |
| | 1950 | 14,269 | +32 | Feb. 1, | '53 | 20,372 | — 7 |
| | 1951 | 18,101 | + 4 | Mar. 1, | '53 | 17,923 | + 5 |
| | 1952 | 18,652 | + 1 | Apr. 1, | '53 | 17,208 | +10 |
| | 1953 | 18,870 | | May 1, | '53 | 18,870 | |

## MAY* INVENTORIES OF FUEL

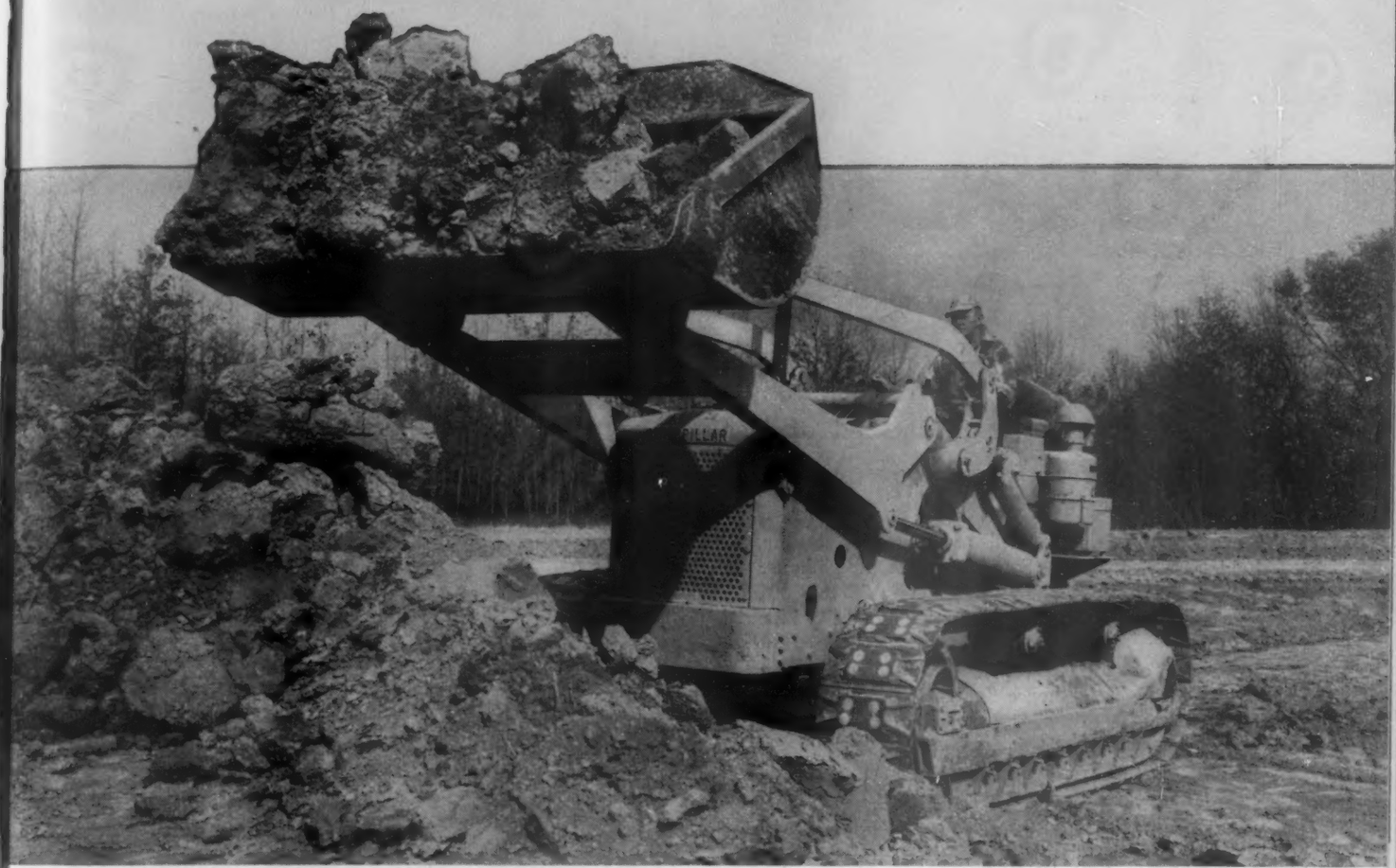
| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $55,973 | —22 | Jan. 1, | '52 | $57,842 | —24 |
| | 1948 | 62,094 | —30 | Apr. 1, | '52 | 60,435 | —28 |
| | 1949 | 81,686 | —47 | Jan. 1, | '53 | 50,354 | —13 |
| | 1950 | 43,695 | —— | Feb. 1, | '53 | 48,616 | —10 |
| | 1951 | 63,267 | —31 | Mar. 1, | '53 | 48,349 | —10 |
| | 1952 | 63,492 | —31 | Apr. 1, | '53 | 47,207 | — 7 |
| | 1953 | 43,695 | | May 1, | '53 | 43,695 | |

## MAY* TOTAL INVENTORIES†

| May '53 Compared to Other Mays (000) | | | | May '53 Compared to Other Months '52 and '53 (000) | | | |
|---|---|---|---|---|---|---|---|
| Year | | Amt. | % Change | Month | | Amt. | % Change |
| May 1, | 1947 | $720,591 | +17 | Jan. 1, | '52 | $909,490 | — 7 |
| | 1948 | 806,905 | + 5 | Apr. 1, | '52 | 936,414 | —10 |
| | 1949 | 885,399 | — 5 | Jan. 1, | '53 | 839,830 | + 1 |
| | 1950 | 716,868 | +18 | Feb. 1, | '53 | 844,459 | —— |
| | 1951 | 840,156 | + 1 | Mar. 1, | '53 | 850,267 | — 1 |
| | 1952 | 934,973 | —10 | Apr. 1, | '53 | 853,467 | — 1 |
| | 1953 | 845,452 | | May 1, | '53 | 845,452 | |

*Subject to revision.
†All total inventory figures taken from I. C. C. statement M-125 for the month indicated.

# It takes a load off your budget



The Cat* No. 6 Shovel, with its earth-eating two cubic yard bucket, not only does many jobs well—but it does them economically.

Here's off-track equipment that has the reach and dumping height (10'9") to load gondolas. It's your answer to work around culverts and overpasses, or snow removal in big yards. It's designed for use in restricted overhead areas. It handles excavations from initial digging to finish grading. It adapts itself easily to lifting heavy objects and serves as a heavy-duty lift fork for carrying loads across otherwise inaccessible ground.

Its uses are matched by its economy. Like all Caterpillar equipment, the No. 6 Shovel is always available when you need it. It has a 66 HP Cat Diesel Engine engineered for long life, positive starting on the coldest days. It operates on inexpensive No. 2 furnace oil, yet idles without fouling.

Its rough-and-ready frame is matched to your toughest jobs. Box-type cross brace ties the bucket lift arms together preventing bucket sway. A box section support holds the shovel main frame and track frame into a single rugged structure.

And best of all, this tractor-shovel is completely built by one manufacturer. One dependable dealer provides service, relieves you of the cost of maintaining a large stock of parts. Your Caterpillar Dealer will demonstrate on your job. Call him today.

Caterpillar Tractor Co., Peoria, Illinois.

**CATERPILLAR***

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**NAME THE DATE... YOUR DEALER WILL DEMONSTRATE**

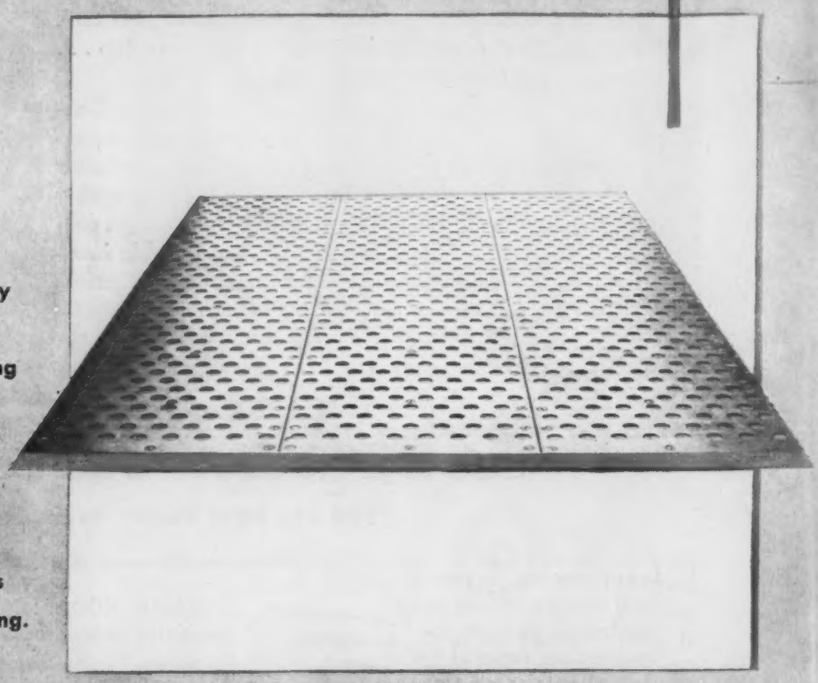
## A METAL FLOOR PROTECTOR PROVES THE VALUE OF

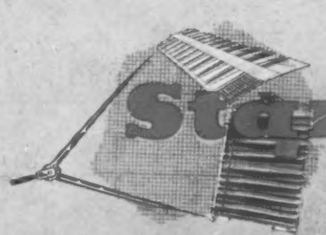
# Standard's RAILROAD LABORATORY!

A Metal Floor Protector seems a simple thing to require development in a *laboratory*, but where railroading is concerned, *Standard* is not content to build for *today* alone.

That's why *eighteen years ago*, our railroad laboratory developed the Metal Floor Protector to withstand *today's* new, heavy industrial trucks and floor-chewing materials handling equipment.

Wooden floors used to deteriorate every three or four years—today, floors protected with *Standard's Metal Floor Protector are still in use* . . . meanwhile Standard's laboratory planning is still eighteen years in the *future* . . . protecting its investment in railroading.





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RAILWAY EQUIPMENT MANUFACTURING COMPANY

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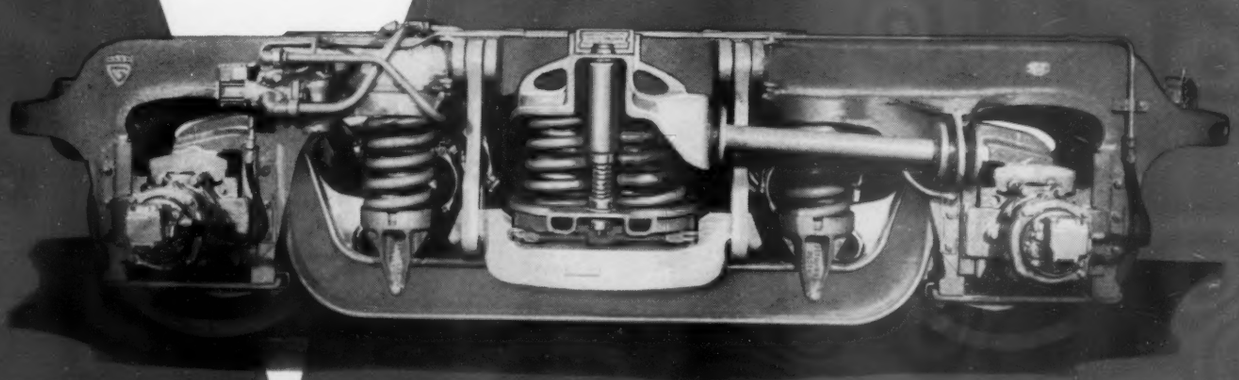
# *It's a Fact!*



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## OUTSIDE SWING HANGER TYPE TRUCKS
### are being used on
## 82% of All Main Line Passenger Cars
## Built or Ordered in the United States and Canada
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When you anchor a car with an Equipco Non-Spin Wheel Hand Brake, that car *remains* firmly anchored, for Equipco Brakes won't loosen-up under car impacts or ground vibration. There's no creeping—no rolling—no hazard to safety of trainmen, equipment, or lading. The Equipco is the *holdtight* brake that stays set until purposely released. *Write for descriptive literature.*

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*Equipco Hand Brake Department*

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**ACROSS THE CONTINENT—2,200 miles to Chicago, 3,100 to New York—is routine transportation for Kern County spuds on the Santa Fe. Refrigeration is necessary to meet extremes in temperature—ranging from Needles, Cal., where a perishables train is shown crossing the Colorado river, to the wind-swept Texas Panhandle.**

A TRAFFIC STORY . . .

# Cross Country Potato Race

## Santa Fe moves 20 thousand carloads a year from California to East under refrigeration in carefully controlled "Operation Spuds"

A generation ago nobody would have believed that a low-value staple commmodity like the common potato would one day move, as a perishable, under refrigeration, across the continent, and bring high profits to its producers, despite the freight charges for so long a haul.

Yet today, movement of the high quality "white rose long white" from Kern county, at the lower end of California's hot and fertile San Joaquin valley, to eastern markets is dubbed by the Santa Fe as about its most intensive mass transportation problem. Wheat is heavier in tonnage, it is true, but on the Santa Fe it travels shorter distances and does not require temperature control.

Kern County potatoes move, for the most part, the full length of the system from Bakersfield to Chicago and Texas gateways. And they move under refrigeration, passing over three major high mountain summits—Tehachapi's, Arizona Divide and New Mexico Continental Divide—and through extremes of temperature ranging from Needles, Cal.—hottest spot in the United States next to Death Valley—to the exposed high plains of the Texas Panhandle. During the peak of the intensive six- to eight-week shipping period in a normal year, the Santa Fe may move the equivalent of from six to eight solid 75- to 80-car trains each day out of Kern county, for a haul over its own rails alone ranging, on the average, from 1,700 to 2,200 miles.

The technique of transporting Kern County potatoes is as different from the old-style, short-haul movement of truck garden produce as the Cadillac-driving "big business" men who produce the crop are from dirt farmers. To make it profitable to ship potatoes as far away as New York (about 3,100 rail miles), there is required high-speed, protected railroad freight transportation of a high degree of exactitude and control. Santa Fe calls it "Operation Spuds."

### *Railroad's Stake*

The railroad has an important stake in the kind of crop producers choose to plant. Kern County potato growers are also important cotton producers; in bad potato years they may shift to cotton. But the two crops have a contrasting impact on the railroad business. One Kern County acre will grow some 360 hundred-pound sacks of potatoes—or one refrigerator car load. That same acre will produce only one bale of cotton—or one-eightieth of a carload.

Hence it is considered good business by the Santa Fe to encourage the production and shipment of perish-

**EMPTIES WEST (left) move as fast as spud cars move east during the height of the potato shipping season.**

ables. The provision of service and cars by its operating organization is matched by the zeal of its agricultural department in encouraging farmers to raise crops of mutual profit—through dissemination of information about soils, seeds, cultivation and modern harvesting methods.

In 1939 and 1940, for example, half the potato crop shipped out of Kern County wound up at market destination with bacterial ring rot and had to be dumped. To help combat the disease, the Santa Fe and the neighboring Southern Pacific contributed money toward the founding of the Kern County Seed Potato Association, which, by bringing in and testing seed potatoes raised in all parts of the country, has found the types which best resist disease and blemish. Transportation of seed potatoes into the county from distant points is, in itself, an important job of railroad transportation.

Kern County potatoes are a relatively recent addition to long-distance railroad tonnage. The first commercial planting in the district was in 1915. Only 300 acres were planted by 1920. Cultivation hit about 2,000 acres in 1930—most of it for local consumption. By 1940, plantings had moved up to 30,000 acres; they reached a peak of 65,000 acres during World War II; they comprised almost 53,000 acres this year. Total carloads produced ran almost 44,000 in the peak producing year of 1948; 41,000 in 1950; and almost 32,000 in 1952.

**IT TAKES 38 to 40 minutes to load 360 sacks of long whites into a standard reefer. That's about 36,000 lb.**

Since only about 30 per cent of this production is for California, growth of this stature required brand-new methods of marketing for its success. Kern County is now the country's second largest producer of potatoes (next to Aroostook county, Me.) and the largest producer of so-called "early potatoes." Between May 1 and July 1, the county ships out about 60 per cent of the entire consumption of the U. S. during that period.

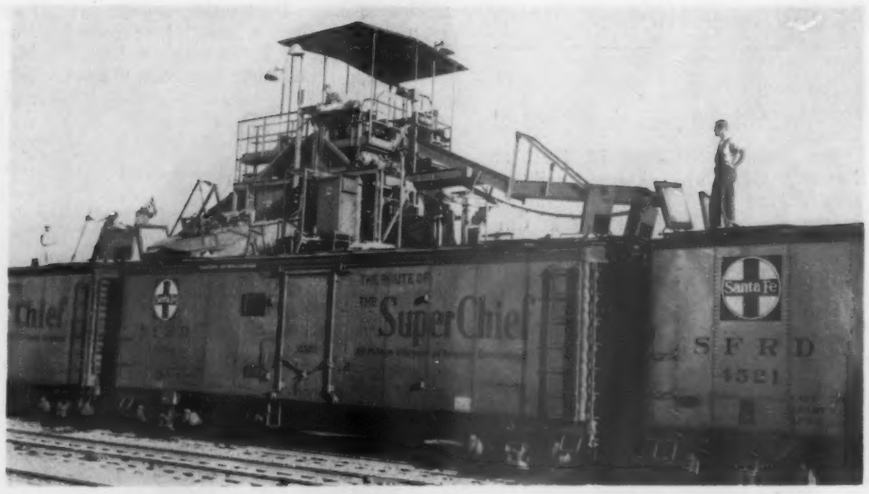
### *Exact Transportation*

An indispensable ingredient of this brand new kind of marketing is fast and exact railroad transportation. Here are the major essentials— lacking any one of which Kern County producers cannot sell to distant points profitably:

(1) *High-speed, long-distance movement, on dependable schedules.*

Kern county's real asset is its ability to harvest potatoes earlier than other producing districts. But it must move its product much longer distances to the big markets. And the earlier it reaches these markets, the higher the price. During the opening of the season, every day which can be saved in transit time adds generously to the price received by the producer. Only with premium prices can the growers afford to pay to ship long distances. When a delay in arrival at destination of two or three hours may make the Santa Fe accountable for as high as $18,000 on a 100-car train of spuds, in a declining market, it is easy to see why the road's organization lives at high tension during the potato-shipping season.

The road's advertised schedule for all perishables from Bakersfield, the concentration point, to Chicago (2,196 miles) is 110½ hours, with 8 a.m. departure from Bakersfield, Day 1 (or the day after loaded), and arrival in Corwith yard at 12:30 a.m., on Day 6. To give forces at Kansas City and Chicago time, however, in which to




**THIS HIGH-SPEED Rico icing machine can precision-load five tons of prepared ice into a car in 85 seconds.**

handle the many sections of the train operated on this schedule and to perform terminal services that are required to provide delivery to team track, auction platform or connecting roads, the perishable trains are fleeted in such manner that a spread in arrivals of 9 to 10 hours between the first and last section is accomplished. For this purpose, one or two sections depart from Bakersfield earlier, and several later, than the advertised time, and actually make the run to Chicago in considerably less than 110½ hours.

(2) *Good supply of refrigerator cars at the right time.* Ample cars to handle the early market loads at the very beginning of the harvest are another "must," lest premium markets be missed. This year, the Santa Fe started stockpiling reefers in the Bakersfield district around April for a harvest which began about June 1. They had to be clean cars and mechanically fit for a fast and long ride.

The car supply is generated in accordance with careful monthly estimates of plantings, crops and markets made by local representatives of the road's agriculture department and agents of its refrigerator department stationed at producing points.

After the season gets underway, the supply must be kept fluid. Kern county is hot semi-desert country. Its potatoes could neither be stored nor left in the hot fields, even if marketing requirements permitted—which they don't. Hence, the Santa Fe moves trainloads of empties west practically as fast as it moves perishables east.

(3) *Dependable accomplishment of diversion and reconsignment orders.*

Each shipper gets three free diversions—plus a fourth if diversion is accomplished before a car reaches the destination to which it was originally billed. The concentrated harvesting and shipping season for Kern county potatoes, plus the need for premium prices, makes for a volatile market. A large proportion of the spuds are started eastward before a buyer has been found. These "rollers," as the trade dubs them, almost invariably require diversion. Any failure by the railroad to accomplish these diversions would bring heavy losses. Half the cars in a train of potatoes will be diverted at least once before the nucleus of the train departs from Kansas City, on the average.

(4) *Careful control of temperature en route.* Kern county potatoes almost always move under refrigeration. Shippers vary widely in their notions about what kind of temperature is required. At least seven different patterns of icing instructions may be given by the shipper to apply between Bakersfield and Chicago—ranging from "Move under standard ventilation to Needles for initial icing," to "Re-ice at all regular stations." To give this kind of selective icing, without incurring unbearable delays at terminals, the Santa Fe uses two important tools—modern high speed icing methods and advance transmission of consist information to all handling points en route.

Since the end of World War II, high-speed Rico icing machines—designed by Santa Fe and built by the Link Belt Company—have been installed at Bakersfield, and Needles, Cal.; Belen, N. M.; Waynoka, Okla.; and Kansas City (Argentine), Kan. Running on rails atop the icing docks, these machines are mobile integrated ice transporters, processors and distributors. (See *Railway Age*, December 10, 1949, page 46, for description.) One of them can ice a whole train of 100 cars at a rate of 85 seconds per car.

At Bakersfield, where three high speed machines may work simultaneously, a total crew of nine men can do, at much greater speed and more efficiently, the icing operation formerly requiring a large number of men icing manually. Further, it has been demonstrated that, if necessary, the machines can be operated without strain by women—an important national asset in time of war. All icing stations en route will handle a minimum block of 65 cars on one track without breaking the train. Hence, unless diversions are ordered, no switching is required on any train of less than 65 cars.

Advance information on consists is given at every point at which trains are worked. As diversions are ordered and accomplished, the consist advices are altered promptly. At each icing station, inspectors working out of the Santa Fe refrigerator department use this advance information to establish the approximate ice requirements for each train prior to arrival. The icing machines start filling the first bunker as soon as the wheels stop rolling.

"Operation Spuds" is largely a matter of "get it in; get it out; keep it rolling."

# Railway Officers

(*Continued from page* 18)
freight traffic manager at Chicago in 1946.

Mr. Blauel, born June 12, 1888, at Dessau, Germany, entered railroad service June 15, 1905, as stenographer in the Erie traffic department at Chi-

**Alfred Blauel**

cago. After serving in various clerical capacities, he was appointed chief of tariff bureau, assistant general freight agent, general freight agent, assistant freight traffic manager and freight traffic manager, all at Chicago. Mr. Blauel became assistant vice-president in charge of rates and divisions at New York July 1, 1946.

**F. L. Steinbright,** superintendent communications of the NORTHERN PACIFIC, has been promoted to assistant to vice-president—operations at St. Paul. Mr. Steinbright was associated

**F. L. Steinbright**

with the Western Union Telegraph Company at Chicago as traffic engineer prior to joining the NP as superintendent communications in 1941.

**Richard B. Hood** has been appointed assistant to president of the BESSEMER & LAKE ERIE and the UNION. He is a native of Uniontown, Pa., was graduated from Dartmouth College in 1930, and received a law degree from the University of Pittsburgh in 1934. From that time until his recent ap-

**Richard B. Hood**

pointment, he served with the Federal Bureau of Investigation and was in charge of the Washington field office.

## FINANCIAL, LEGAL & ACCOUNTING

**J. M. Lloyd,** right of way agent of the SOUTHERN PACIFIC, has been named manager of the newly created real estate department at Houston, as well as vice-president and general manager of the Rio Bravo Oil Company, an SP subsidiary. **C. A. Rabson,** assistant tax commissioner, succeeds Mr. Lloyd, and in turn has been succeeded by **H. P. Chandler,** land appraiser.

**William J. Sloan,** assistant treasurer, Pacific lines, of the SOUTHERN PACIFIC, has retired. He has been succeeded by **C. E. Quigley,** methods and research officer in the accounting department.

**Richard R. Bongartz,** general attorney of the LONG ISLAND, and **Adelbert S. Schroeder,** assistant general counsel of the PENNSYLVANIA, have been appointed general attorneys of the PRR.

## OPERATING

**J. M. Pitchford,** terminal trainmaster of the CHESAPEAKE & OHIO at Charleston terminal, Elk, W.Va., has been appointed assistant superintendent, Huntington division, at Huntington, W.Va., succeeding **O. W. Draper,** whose appointment as superintendent, Russell division, was reported in *Railway Age* July 27. **E. T. Hunt,** assistant terminal trainmaster, has been named terminal trainmaster at Elk, succeeding Mr. Pitchford.

As reported in *Railway Age* June 15, page 150, **J. W. Wilkes** has been appointed general superintendent of the CANADIAN PACIFIC at Moose Jaw, Sask., and **D. M. Dunlop** has been named superintendent there. **A. L. Lowe,** assistant superintendent at Fort Macleod, Alta., has been transferred to Weyburn, succeeding Mr. Dunlop, and has, in turn, been replaced by **A. L. Blaser,** assistant superintendent at Fort William. **C. F. Gwyn** transfers from Moose Jaw to succeed Mr.

**J. W. Wilkes**

Blaser. **J. A. Forbes,** assistant superintendent at Wynyard, Sask., transfers to Moose Jaw to replace Mr. Gwyn. The position of assistant superintendent at Wynyard has been assumed by **C. C. Whiteman,** acting assistant superintendent at Moose Jaw.

Mr. Wilkes joined the CPR at Moose Jaw in 1911 as brakeman. He had

**D. M. Dunlop**

been assistant superintendent at Moose Jaw and Calgary for six years when he was named superintendent of the Calgary division in 1939, transferring to Moose Jaw in 1946. He had been acting general superintendent since February 1952.

Mr. Dunlop joined the railroad in 1931. In 1936 he became a transitman; in 1940 a roadmaster, and in 1947 moved to Weyburn as assistant superintendent.

**Charles W. Schwarz,** division superintendent of the JERSEY CENTRAL LINES at Jersey City, N.J., has been appointed chief of yard and terminal

operations, and has been succeeded by **Joseph J. Galuppo,** assistant division superintendent at Allentown, Pa. **Charles B. Schlegel,** assistant division superintendent at Jersey City, has been transferred to Allentown. **Alex E. Bjorkner,** assistant superintendent transportation, succeeds Mr. Schlegel

**Charles W. Schwarz**

at Jersey City. Mr. Schwarz entered JCL employ as a messenger in 1916, and served in various yard clerical positions, and as trainman and conductor. In 1926 he was appointed yardmaster at Newark, advancing to general yardmaster, terminal trainmaster, supervisor yard and terminal operation, freight trainmaster and assistant superintendent. In 1943 he was appointed superintendent at Mauch Chunk, Pa., and in 1944 was transferred to Jersey City.

**Berkeley Mills,** superintendent of the New River division of the VIRGINIAN, at Princeton, W. Va., has been appointed assistant general manager at Norfolk, succeeding **W. D. Baker,** retired. **R. W. Hundley,** assistant superintendent at Princeton, succeeds Mr. Mills, and is in turn succeeded by **M. M. Shumate,** trainmaster at Mullens, W. Va. **T. J. Nichols,** assistant trainmaster and assistant road foreman of engines, has been appointed trainmaster to succeed Mr. Shumate, and **L. C. Stewart** has been named assistant trainmaster at Mullens.

**R. B. Graham,** general superintendent of the Atlantic region, CANADIAN NATIONAL, at Moncton, N.B., has been appointed assistant general manager of the region. His former position has been abolished.

**S. P. Strickland,** assistant trainmaster of the NASHVILLE, CHATTANOOGA & ST. LOUIS, at Chattanooga, Tenn., has been appointed assistant superintendent of the Chattanooga and Huntsville divisions. He has been succeeded by **M. S. Womack, Jr.**

**W. W. Francis,** assistant superintendent of the ST. LOUIS-SAN FRANCISCO at Amory, Miss., has been advanced to superintendent of terminals at Birmingham, Ala., succeeding **J. K. Beshears,** who has been named superintendent at Ft. Smith, Ark. Mr. Beshears succeeds **W. R. Allen,** who has been transferred to Chaffee, Mo., to succeed **R. C. Grayson,** who in turn has been transferred to Tulsa, Okla. **L. W. Menk,** superintendent at Tulsa, has been appointed assistant general superintendent transportation at Springfield, Mo. **R. L. Edmonson,** assistant superintendent at Tulsa, has been transferred to Ft. Scott, Kan. **G. E. Warfel,** trainmaster of the ALABAMA, TENNESSEE & NORTHERN (a Frisco subsidiary) at York, Ala., succeeds Mr. Edmonson, and **K. E. Henderson,** trainmaster at Enid, Okla., has been transferred to replace Mr. Warfel. **R. P. Shoaf,** student supervisor in the engineering department at Tulsa, has been named safety supervisor there, succeeding **J. F. Emery,** who has been appointed trainmaster at Ft. Smith.

**Otto H. Zimmerman, Jr.,** general superintendent transportation of the ILLINOIS CENTRAL at Chicago, has been named general manager there. Mr. Zimmerman succeeds **Clyde J. Fitzpatrick,** whose appointment as vice-president—operation was reported in *Railway Age* August 3. **Edward H. Buelow,** superintendent at Waterloo, Iowa, succeeds Mr. Zimmerman, and in turn has been succeeded by **S. C. Jones,** superintendent at Jackson, Tenn. **F. Kenneth Stanford,** assistant to general superintendent transportation, replaces Mr. Jones. **S. F. Lynch** retired at his own request July 31 as general manager at Memphis, Tenn. **C. S. Condon** has been appointed trainmaster at Cleveland, Miss., succeeding **R. K. Osterdock,**

**Otto H. Zimmerman, Jr.**

who has been transferred to McComb, Miss., to replace **M. A. Sheahan,** who has been granted a leave of absence.

Mr. Zimmerman joined the IC as section laborer at Champaign, Ill.; was later switchman and engine foreman; and subsequently held numerous operating positions on the Illinois, Kentucky, Springfield and Iowa divisions. In 1949 he was promoted to superintendent at Clinton, Ill., and the following year was transferred to Waterloo. He became assistant to vice-president—operation in May 1951, and in November that year was promoted to general superintendent transportation.

Mr. Buelow entered IC service as record clerk at Vicksburg in 1924; from 1926 to 1930 worked in the master mechanic's office there, and later advanced to chief clerk to general foreman at Monroe, La. He became assistant trainmaster in 1941. In 1949 he was promoted to superintendent, Memphis division, transferring to the

**Edward H. Buelow**

Springfield division in 1950, and the Iowa division in 1951.

Mr. Stanford joined the IC in 1933 as special apprentice in the mechanical department at Chicago. In 1935 he became clerk in the operating department, and was subsequently clerk in the office of general superintendent transportation, and in safety work in the personnel department. In 1947 he became assistant trainmaster at Clinton, Ill., later transferring to Carbondale; was promoted to trainmaster at Vicksburg in 1948, transferring to Freeport in 1951; and became assistant to general superintendent transportation in 1952.

**J. V. Forrest,** assistant superintendent of the CANADIAN PACIFIC at Winnipeg, has been named acting superintendent, Winnipeg terminal, succeeding **W. M. Russell,** assigned to special duties.

**Hugh J. Nugent,** chief freight car dispatcher of the CHICAGO, ROCK ISLAND & PACIFIC, has been named assistant to general superintendent transportation at Chicago, succeeding the late **W. A. Hennke.**

**John R. Traylor** has been named assistant to chief operating officer of the MISSOURI PACIFIC at St. Louis. Mr. Traylor began his work with the MP in 1925 as cost engineer in the valuation department. After serving as assistant engineer and assistant to valuation engineer, he was advanced to assistant valuation engineer of the MP's Texas-Louisiana lines in 1943, and be-

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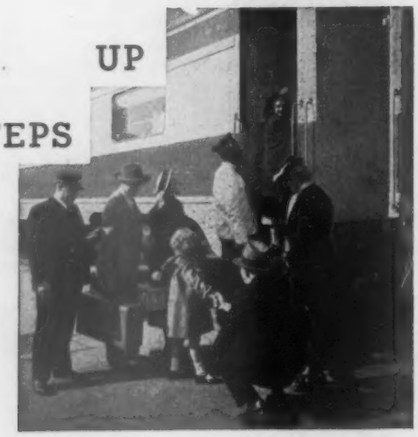

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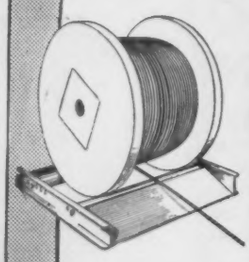

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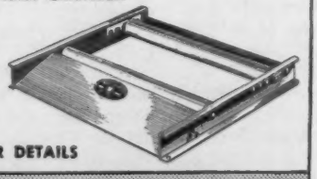

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came assistant to general manager in 1948. For the past five years, Mr. Traylor has been on special assignment to the Railway Express Agency at New York.

All CANADIAN NATIONAL highway services, except those of Canadian National Express, have been organized into a single road transport department. **F. A. Gaffney,** chief of transport research, has been named general manager of the new department.

**E. C. Kaiser,** superintendent motive power of the LEHIGH & NEW ENGLAND, has been appointed also assistant general manager at Pen Argyl, Pa.

**Donald A. Baumgartner,** assistant superintendent transportation of the ATCHISON, TOPEKA & SANTA FE, has been promoted to superintendent transportation at Chicago. Named to succeed him is **Floren Dayton Eckert,** supervisor freight schedules. Mr. Baumgartner entered Santa Fe service as schedule clerk in 1941; was named supervisor freight schedules in 1942; chief clerk in 1944, and assistant superintendent transportation in 1947.

**Donald A. Baumgartner**

**T. Louis Hildebrand** has been appointed supervisor of safety of the DULUTH, SOUTH SHORE & ATLANTIC at Marquette, Mich., succeeding **Donald Hart,** who continues as trainmaster.

**W. A. Robarts** has been appointed terminal trainmaster of the ATLANTIC COAST LINE at Atlanta, Ga.

**Oscar A. Frauson** has been appointed superintendent of lighterage and stations—New York Harbor, of the ERIE at New York. The position of superintendent of lighterage, formerly held by Mr. Frauson, has been abolished. **Frank M. Sportelly,** agent at Duane Street Station, has been appointed assistant superintendent of lighterage and stations—New York Harbor, at Jersey City, N.J. The territory of **Nicholas J. DeVito,** supervisor of stations and car service, has been extended to include the Northern and Piermont branches of the New York division, and the New Jersey &

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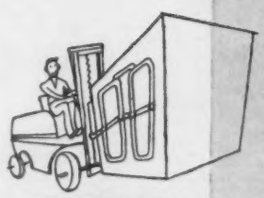
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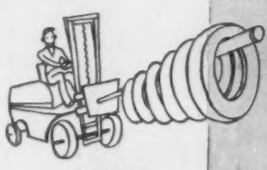
RAM

Perhaps you're hesitating to buy a fork truck because your principal handling job requires only part-time truck application. If that's the case, don't fail to look into this attachments angle. Chances are we've got, or can devise, one or more attachments that will enable you to utilize a fork truck profitably, all day long.

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Your local Clark dealer (listed in the Yellow Pages of your phone book) will be glad to help you plan ways to multiply the usefulness of your Clark trucks and POWRWORKER hand trucks. Or if you prefer to use the coupon, we'll gladly send a brochure describing the Clark line of attachments.

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ROTATING ROLL CLAMP

New York. The position of assistant superintendent, New York division (Terminal) has been abolished. **James D. McFadden,** assistant superintendent, New York division, will have jurisdiction over passenger, freight and terminal (yard) operations.

## TRAFFIC

A freight traffic department which will allow handling of its own freight traffic matters has been established by the PACIFIC MOTOR TRUCKING COMPANY, a subsidiary of the SOUTHERN PACIFIC. Named as freight traffic manager is **M. G. Smith,** formerly on the freight traffic staff of the SP in charge of P.M.T. traffic. Assistant freight traffic manager is **S. F. Jordan,** superintendent of P.M.T. at San Francisco. P.M.T. operates more than 1,600 trucking units over 12,199 route-miles in coordination with SP rail service in six western states.

**Robert Simmons** has been appointed manager of the newly formed department of tours of the CANADIAN NATIONAL at Montreal. The department will offer travelers "pleasure-planned," all-expense package tours which will include transportation, meal, hotel, sightseeing and incidental costs. Trips will cover week-end to month-or-longer periods, and will start from principal cities across Canada and the United States.

**Gay M. Bradbury,** who has been appointed freight traffic manager of the BANGOR & AROOSTOOK at Bangor, Me. (*Railway Age*, June 15), entered B&A employ in June 1909 as clerk in the Houlton freight office. During World War I he served in the U.S.

**Gay M. Bradbury**

Army, overseas. He returned to the B&A in January 1920 as clerk in the freight traffic department at Bangor, and has since advanced through position of rate clerk, chief clerk and general freight agent.

**Ralph C. Buckingham,** manager of traffic research and advertising of the PULLMAN COMPANY at Chicago, has been appointed passenger traffic manager. Prior to 1944 Mr. Buckingham was associated with the Union

**Ralph C. Buckingham**

Pacific's passenger traffic department at Omaha. In that year, he joined the Trans-Continental and Western Passenger Associations and the Western Military Bureau at Chicago. He went to Pullman in 1952 as manager of traffic research and advertising.

**M. M. Albright, Jr.,** has been appointed general freight agent of the ATLANTA & WEST POINT, the WESTERN OF ALABAMA and the GEORGIA at At-


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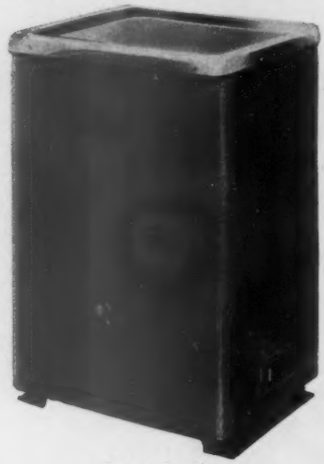

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lanta. **B. H. Smith,** division freight agent, has retired after 43 years of service with those lines. Mr. Albright was born at Richmond, Va.; attended Georgia Institute of Technology, and entered the service of the Southern in 1912 in the accounting department at Washington, D.C. He served subsequently as chief clerk and general yardmaster at Richmond, rate clerk at Atlanta and Washington, and tariff clerk and executive clerk at Atlanta. In 1924 Mr. Albright joined the A&WP, the WofA and the Georgia as executive clerk to general freight agent, and subsequently became commerce agent and assistant general freight agent.

**Frank A. Murphy** has been promoted to freight traffic manager of the MAINE CENTRAL at Portland, Me. (*Railway Age*, June 8). Mr. Murphy joined the MC in August 1908, at 18, as baggagemaster at Calais, continuing as freight agent and cashier. Following World War I Army service, he worked as cashier, traveling freight agent and general agent until January 1931, when he opened the road's first off-line office in New York. He became assistant general freight agent at Portland in 1935, general freight agent in February 1946, and assistant to vice-president—traffic in 1948.

**Frank A. Murphy**

**S. F. Witt,** division freight agent of the CHESAPEAKE & OHIO at Detroit, has been appointed assistant general freight agent, succeeding **F. W. Ditman,** retired. **R. L. Schilke,** general agent at Milwaukee, succeeds Mr. Witt, while **A. F. Haller,** freight service representative, has been named general agent, all at Detroit.

**E. E. Roethemeier** and **G. W. Billmyer** have been appointed general agents of the MISSOURI PACIFIC at Louisville, Ky., and Lincoln, Neb., respectively. Mr. Roethemeier succeeds **M. F. Coorssen,** who recently died, while Mr. Billmyer succeeds **J. J. Myers,** who has been advanced to assistant to foreign freight traffic manager at St. Louis.

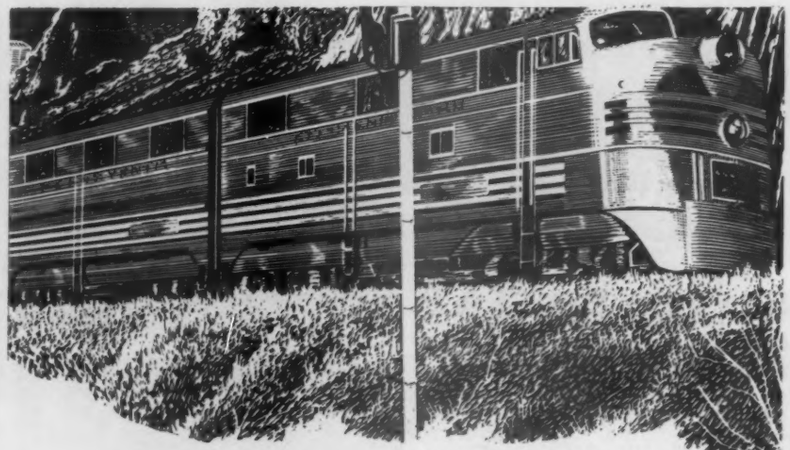
**Charles E. Graham,** division passenger agent of the ATCHISON, TOPEKA & SANTA FE at Chicago, retired August 1. Succeeding him is **Joseph H. Mathias,** reservation bureau manager there.

**A. M. Shepherd,** traffic representative of the BOSTON & MAINE, has been appointed division freight agent, with headquarters as before at Troy, N.Y., succeeding **Wilfred B. Wedge,** who has been appointed general agent at Portland, Me.

**H. L. Martin,** gneral eastern freight agent of the NORFOLK & WESTERN at New York, has retired, and has been succeeded by **A. W. Huggard. G. A. Crueger** has been appointed assistant general eastern freight agent, and **N. C. Elliott** and **H. G. Maseker,** district freight agents at New York. **J. F. Wissell** and **C W. Burns** have been appointed district freight agents at Chicago.

**W. G. Crocket,** city freight agent of the SOUTHERN PACIFIC at San Francisco, has been appointed district freight agent of the NORTHWESTERN PACIFIC at that point, succeeding **T. E. Hewitt,** who has been appointed assistant district freight agent of the SP at Oakland, Cal.

**C. D. Jefferson, A. H. Mayo** and

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**P. W. Phillips,** assistant general freight agents of the CHESAPEAKE & OHIO at Richmond, Va., have been appointed assistant freight traffic managers there. **L. J. Byrne** and **R. P. Laird,** general freight agents at Detroit, have been appointed assistant freight traffic managers at Detroit.

## OBITUARY

**Frank Owen Haymond,** who retired in 1945 as vice-president and general manager of the now-abandoned BINGHAM & GARFIELD, died July 18 at Salt Lake City, Utah.

## Meetings & Conventions

**The following list gives names and addresses of secretaries, and dates and places of next or regular meetings.**

AIR BRAKE ASSOCIATION.—Lawrence Wilcox, Room 827, 80 E. Jackson Blvd., Chicago 4. Annual meeting, September 14-16, 1953, Hotel Sherman, Chicago.

ALLIED RAILWAY SUPPLY ASSOCIATION.—C. F. Weil, P. O. Box 5522, Chicago 80.

AMERICAN ASSOCIATION OF BAGGAGE TRAFFIC MANAGERS.—T. R. Stanton, 1450 Railway Exchange Bldg., St. Louis 1. Annual meeting, June 15-17, 1954, Edgewater Beach Hotel, Chicago.

AMERICAN ASSOCIATION OF PASSENGER RATE MEN.—William Bina, Atchison, Topeka & Santa Fe, 80 E. Jackson Blvd., Chicago 4. Annual meeting, September 10-12, 1953, aboard Steamer Tadoussac on Saguenay River cruise, leaving Montreal on September 10.

AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, Eastern Time Table Distributing Company, Liberty Street Terminal, New York 6. Annual meeting, October 12-14, 1953, French Lick Springs, Ind.

AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5.

AMERICAN ASSOCIATION OF TRAVELING PASSENGER AGENTS.—C. A. Melin, P. O. Box 5025, Cleveland 2. Annual meeting, September 15-16, 1953, Montreal.

AMERICAN COUNCIL OF RAILROAD WOMEN.—Eleanor Runquist, Pullman Company, Merchandise Mart Plaza, Chicago 54. Annual meeting, October 26-28, 1953, Broadmoor Hotel, Colorado Springs, Colo.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5. Annual meeting, September 15-17, 1953, Conrad Hilton Hotel, Chicago.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 E. 47th St., New York 17.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—D. M. Lynn, Erie, Midland Bldg., Cleveland 15.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division—Neal D. Howard, 59 E. Van Buren St., Chicago 5. Annual meeting, March 16-18, 1954, Palmer House, Chicago.

AMERICAN RAILWAY MAGAZINE EDITORS ASSOCIATION.—T. J. Zirbes Jr., Rock Island Lines News Digest, La Salle Street Station, Chicago 5. Annual meeting, October 7-9, 1953, St. Charles Hotel, New Orleans.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—C. E. Huntley, 2000 Massachusetts Ave., N. W., Washington 6, D. C.

AMERICAN SOCIETY FOR TESTING MATERIALS.—R. J. Painter, 1916 Race St., Philadelphia 3.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18. Annual meeting, November 29-December 4, 1953, Statler Hotel, New York.

RAILROAD DIVISION—E. L. Woodward, *Railway Locomotives and Cars*, 79 W. Monroe St., Chicago 3.

AMERICAN WOOD-PRESERVERS' ASSOCIATION.—W. A. Penrose, 839 Seventeenth St., N. W., Washington 6. Annual meeting, April 26-28, 1954, Chalfonte-Haddon Hall, Atlantic City.

ASSOCIATED TRAFFIC CLUBS OF AMERICA.—R. A. Ellison, Cincinnati Chamber of Commerce, 1203 Federal Reserve Bank Bldg., Cincinnati 2. Annual meeting, September 21-23, 1953, Statler Hotel, Boston.

ASSOCIATION OF AMERICAN RAILROAD DINING CAR OFFICERS.—W. F. Ziervogel, 605 S. Ranken Ave., St. Louis 3. Annual meeting, October 13-15, 1953, Jung Hotel, New Orleans.

ASSOCIATION OF AMERICAN RAILROADS—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—J. H. Aydelott, Vice-president, Transportation Bldg., Washington 6, D. C.

Operating-Transportation Division.—A. I. Ciliske, 59 E. Van Buren St., Chicago 5.

Operating Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Transportation Section.—H. A. Eaton, 59 E. Van Buren St., Chicago 5.

Communications Section.—A. H. Grothmann, 59 E. Van Buren St., Chicago 5. Annual meeting, October 20-22, 1953, Hotel Plaza, San Antonio, Tex.

Fire Protection and Insurance Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5. Annual meeting, October 12-14, 1953, Hotel Statler, St. Louis.

Freight Loss and Damage Prevention Section.—G. H. Ruhle, 59 E. Van Buren St., Chicago 5.

Freight Station Section.—W. E. Todd, 59 E. Van Buren St., Chicago 5.

Medical and Surgical Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Protective Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Safety Section.—H. S. Dewhurst, 59 E. Van Buren St., Chicago 5.

Electrical Section of the Engineering and Mechanical Divisions.—S. W. Marras, 59 E. Van Buren St., Chicago 5. Annual meeting, June 29-July 1, 1954, Hotel Sherman, Chicago.

Engineering Division.—E. G. Gehrke, 59 E. Van Buren St., Chicago 5.

Construction and Maintenance Section.—Neal D. Howard, 59 E. Van Buren St., Chicago 5. Annual meeting, March 16-18, 1954, Palmer House, Chicago.

Signal Section.—R. H. C. Balliet, 59 E. Van Buren St., Chicago 5. Annual meeting, September 28-30, 1953, Chase Hotel, St. Louis.

Mechanical Division.—Fred Peronto, 59 T. Van Buren St., Chicago 5. Annual meeting, June 29-July 1, 1954, Hotel Sherman, Chicago.

Purchases and Stores Division.—John L. Timanus, Transportation Bldg., Washington 6, D. C.

Freight Claim Division.—C. C. Beauprie, 59 E. Van Buren St., Chicago 5.

General Claims Division.—F. L. Johnson, Gulf, Mobile & Ohio, 104 St. Francis St., Mobile 5, Ala.

Car Service Division.—Arthur H. Gass, Chairman, Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—Arthur R. Seder, Vice-president, Transportation Bldg., Washington 6, D. C.

Accounting Division.—R. E. Keefer, Transportation Bldg., Washington 6, D. C. Annual meeting, May 24-27, 1954, Shoreham Hotel, Washington, D. C.

Treasury Division.—R. E. Keefer, Transportation Bldg., Washington 6, D. C. Annual meeting, September 17-19, 1953, Grand Hotel, Mackinac Island, Mich.

Traffic Department.—Walter J. Kelly, Vice-presi-


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Action photographs taken at Chuquicamata

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ASSOCIATION OF INTERSTATE COMMERCE COMMISSION PRACTITIONERS.—Miss Sarah F. McDonough, Executive Secretary, 2218 I.C.C. Building, Washington 25, D.C.

ASSOCIATION OF RAILROAD ADVERTISING MANAGERS.—A. W. Eckstein, Asst. Secy., Illinois Central, 135 E. Eleventh Pl., Chicago 5. Annual meeting, January 28-30, 1954, New Orleans.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Gulf, Mobile & Ohio, 104 St. Francis St., Mobile 5, Ala.

BRIDGE AND BUILDING SUPPLY ASSOCIATION.—L. R. Gurley, Modern Railroads, 201 N. Wells St., Chicago 6. Exhibit in conjunction with the meetings of the American Railway Bridge & Building Association and Roadmasters & Maintenance of Way Association, September 14-17, 1953, The Coliseum, Chicago.

CANADIAN RAILWAY CLUB.—C. R. Crook, P. O. Box 162, Montreal 3, Que. Regular meetings, second Monday of each month, except June, July and August, Mount Royal Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS.—D. W. Kramer, 7207 W. Main, Belleville, Ill. Regular meetings fourth Tuesday of each month except June, July and August, Hotel DeSoto.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31. Annual meeting, September 14-16, 1953, Hotel Sherman, Chicago.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—W. R. McCain, Mather Stock Car Company, 326 N. Michi-

## Selected Income and Balance-Sheet Items of Class I Steam Railways in the United States

Compiled from 126 reports (Form IBS) representing 130 steam railways

*(Switching and Terminal Companies Not Included)*

| Income Items | United States For the month of April 1953 | 1952 | For the four months of 1953 | 1952 |
|---|---|---|---|---|
| 1. Net railway operating income | $101,509,343 | $72,424,753 | $353,261,893 | $291,319,173 |
| 2. Other income | 16,382,026 | 16,551,752 | 71,659,860 | 67,168,240 |
| 3. Total income | 117,891,369 | 88,976,505 | 424,921,753 | 358,487,430 |
| 4. Miscellaneous deductions from income | 4,060,908 | 4,111,256 | 16,358,846 | 16,973,173 |
| 5. Income available for fixed charges | 113,830,461 | 84,865,249 | 408,562,907 | 341,514,240 |
| 6. Fixed charges: | | | | |
| 6-01. Rent for leased roads and equipment | 6,186,057 | 6,696,199 | 24,803,172 | 26,286,712 |
| 6-02. Interest deductions[1] | 27,292,582 | 26,394,185 | 108,444,841 | 105,292,411 |
| 6-03. Amortization of discount on funded debt | 260,764 | 242,860 | 976,134 | 978,064 |
| 6-04. Total fixed charges | 33,739,403 | 33,333,244 | 134,224,147 | 132,557,187 |
| 7. Income after fixed charges | 80,091,058 | 51,532,005 | 274,338,760 | 208,957,053 |
| 8. Other Deductions | 2,850,294 | 2,929,557 | 11,255,313 | 11,664,157 |
| 9. Net income | 77,240,764 | 48,602,448 | 263,083,447 | 197,292,896 |
| 10. Depreciation (Way and structures and Equipment) | 41,971,818 | 39,843,611 | 164,460,813 | 157,314,924 |
| 11. Federal income taxes | 56,165,245 | 38,555,092 | 206,420,531 | 192,696,421 |
| 12. Dividend appropriations: | | | | |
| 12-01. On common stock | 6,972,093 | 13,513,759 | 73,650,152 | 65,925,146 |
| 12-02. On preferred stock | 2,119,976 | 2,822,660 | 32,762,395 | 30,048,767 |
| Ratio of income to fixed charges (Item 5 ÷ 6-04) | 3.37 | 2.55 | 3.04 | 2.58 |

| Selected Expenditure and Asset Items | United States Balance at end of April 1953 | 1952 |
|---|---|---|
| 17. Expenditures (gross) for additions and betterments—Road | $114,297,791 | $112,161,818 |
| 18. Expenditures (gross) for additions and betterments—Equipment | 314,360,391 | 371,313,454 |
| 19. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707) | 463,457,632 | 478,375,605 |
| 20. Other unadjusted debits | 83,775,116 | 84,053,914 |
| 21. Cash | 892,435,642 | 799,793,418 |
| 22. Temporary cash investments | 978,096,764 | 842,329,196 |
| 23. Special deposits | 93,633,129 | 88,864,353 |
| 24. Loans and bills receivable | 1,342,948 | 2,422,257 |
| 25. Traffic and car-service balances—Dr. | 63,714,666 | 55,440,917 |
| 26. Net balance receivable from agents and conductors | 163,162,910 | 153,159,019 |
| 27. Miscellaneous accounts receivable | 371,853,816 | 476,798,820 |
| 28. Materials and supplies | 845,451,894 | 935,052,388 |
| 29. Interest and dividends receivable | 17,158,053 | 16,575,419 |
| 30. Accrued accounts receivable | 214,549,615 | 213,475,316 |
| 31. Other current assets | 39,164,267 | 35,099,299 |
| 32. Total current assets (items 21 to 31) | 3,680,563,704 | 3,619,010,402 |
| **Selected Liability Items** | | |
| 40. Funded debt maturing within 6 months[2] | $159,805,873 | $185,050,921 |
| 41. Loans and bills payable[3] | 2,844,083 | 2,955,211 |
| 42. Traffic and car-service balances—Cr. | 102,343,039 | 89,733,094 |
| 43. Audited accounts and wages payable | 547,587,702 | 530,955,392 |
| 44. Miscellaneous accounts payable | 204,234,994 | 193,520,783 |
| 45. Interest matured unpaid | 40,989,333 | 78,267,894 |
| 46. Dividends matured unpaid | 9,794,391 | 6,561,906 |
| 47. Unmatured interest accrued | 74,019,941 | 70,553,599 |
| 48. Unmatured dividends declared | 24,759,081 | 28,680,842 |
| 49. Accrued accounts payable | 225,288,490 | 291,450,189 |
| 50. Taxes accrued | 882,470,726 | 868,562,823 |
| 51. Other current liabilities | 99,590,745 | 84,283,380 |
| 52. Total current liabilities (items 41 to 51) | 2,213,922,525 | 2,245,525,113 |
| 53. Analysis of taxes accrued: | | |
| 53-01. U. S. Government taxes | 712,126,910 | 704,889,505 |
| 53-02. Other than U. S. Government taxes | 170,343,816 | 163,673,318 |
| 54. Other unadjusted credits | 264,134,314 | 275,181,366 |

[1] Represents accruals, including the amount in default.
[2] Includes payments of principal of long-term debt (other than long-term debt in default) which becomes due within six months after close of month of report.
[3] Includes obligations which mature not more than one year after date of issue.
Compiled by the Bureau of Transport Economics and Statistics, Interstate Commerce Commission.
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gan Ave., Chicago 1. Regular meetings, second Monday of each month, except June, July and August, LaSalle Hotel.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, Hotel Statler, McKinley Square, Buffalo 5. Regular meetings, second Thursday of each month except June, July and August, Hotel Statler.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. C. Rochester, Canadian National, 891 Notre Dame St., West, Montreal 3, Que. Next meeting, November 12-13, 1953, St. Moritz Hotel, New York.

EASTERN CAR FOREMAN'S ASSOCIATION.—W. P. Dizard, 30 Church St., New York 7. Regular meetings, second Friday of January, February, March, April, May, October and November, 29 W. 39th St.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker St., North Little Rock, Ark. Annual meeting, September 14-16, 1953, Hotel Sherman, Chicago.

MAINTENANCE OF WAY CLUB OF CHICAGO.—E. C. Patterson, 400 W. Madison St., Chicago 6. Regular meetings, fourth Monday of each month, October through April inclusive, except December, which is third Monday, at Eitel's Restaurant, Field Bldg.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany 8. Annual meeting, September 14-16, 1953, Hotel Sherman, Chicago.

METROPOLITAN MAINTENANCE OF WAY CLUB.—John S. Vreeland, Simmons-Boardman Publishing Corp., 30 Church St., New York 7. Meets in February, April, October and December. Next meeting, October 29, 1953, Hotel Shelbourne, New York.

MILITARY RAILWAY SERVICE VETERANS.—J. E. McNamara, 332 S. Michigan Ave., Chicago 4. Annual meeting, September 18-20, 1953, New Orleans.

MISSISSIPPI VALLEY MAINTENANCE OF WAY CLUB.—P. E. Odom, 1025 Frisco Building, 906 Olive St., St. Louis. Regular meetings, second Monday of each month through May, DeSoto Hotel, St. Louis.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Austin L. Roberts, Jr., 7413 New Post Office Bldg., Washington 4, D. C. Annual meeting. September 21-24, 1953, Roosevelt Hotel, New York.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—J. W. Witherspoon, U. S. Rubber Company, 5675 East Anaheim-Telegraph Road, Los Angeles 22. Annual meeting October 6-8, 1953, Hotel Fontenelle, Omaha, Neb.

NATIONAL DEFENSE TRANSPORTATION ASSOCIATION.—Mrs. Lois C. Gebran, 1001 Connecticut Ave., Washington, D. C. Annual meeting, October 11-13, 1953, Brown Hotel, Louisville, Ky.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—L. J. Dorr, 909 Sheraton Bldg., Washington 5, D. C. Annual meeting, November 19-20, 1953, Jung Hotel, New Orleans.

NATIONAL RAILWAY APPLIANCES ASSOCIATION.—J. B. Templeton, Templeton, Kenly & Co., 1020 S. Central Ave., Chicago 44. Lewis Thomas, Asst. Secy., 59 E. Van Buren St., Chicago 5.

NATIONAL SAFETY COUNCIL, RAILROAD SECTION.—F. R. Callahan, Pullman Co., Merchandise Mart Plaza, Chicago 54. Annual meeting, October 20-22, 1953, Morrison Hotel, Chicago.

NEW ENGLAND RAILROAD CLUB.—William M. McCombs, 35 Lewis Wharf, Boston 10. Regular meetings, second Tuesday of each month, except May September, incl., Hotel Vendome, Boston.

NEW YORK RAILROAD CLUB.—C. T. Stansfield, 30 Church St., New York 7. Regular meetings, third Thursday of each month except June, July, August, September and December, Century Room, Commodore Hotel. Reception, 6 p.m.; dinner, 7; meeting, 8:15.

NORTHWEST CARMEN'S ASSOCIATION.—G. H. Wells, Northern Pacific, St. Paul 1, Minn. Regular meetings, first Monday of each month, except June, July, and August, Midway Club, 1931 University Ave., St. Paul.

NORTHWEST LOCOMOTIVE ASSOCIATION.—R. M. Wigfield, Northern Pacific, Room 1134, G. O. Bldg., St. Paul 1, Minn. Regular meetings, third Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul.

PACIFIC RAILWAY CLUB.—S. E. Byler, 121 E. Sixth St., Los Angeles 14. Regular meetings, second Thursday of each alternate month at Sir Francis Drake Hotel, San Francisco, and Elks' Temple, Los Angeles.

RAILROAD PUBLIC RELATIONS ASSOCIATION.—J. Don Parel, Association of American Railroads, Transportation Bldg., Washington 6, D. C.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, 38 S. Dearborn St., Chicago 3. Annual meeting and dinner, November 20, 1953, Conrad Hilton Hotel, Chicago.

RAILWAY CLUB OF PITTSBURGH.—G. E. Morrison, 2710 Koppers Bldg., Pittsburgh 19. Regular meetings third Thursday of each month, except June-September, incl., and December, Fort Pitt Hotel.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 445-447 N. LaSalle St., Chicago 10.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—L. H. Peters, New York Central, Room 1213, 139 W. Van Buren St., Chicago 5. Annual meeting, September 14-16, 1953, Hotel Sherman, Chicago.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—A. W. Brown, 60 E. 42nd St., New York 17.

RAILWAY SYSTEMS AND PROCEDURES ASSOCIATION.—J. W. Milliken, *Railway Age*, 30 Church St., New York 7.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7. Meets with Communications Section of A.A.R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 1221 Locust St., St. Louis 3. Annual meeting, October 14-16, 1953. Biltmore Hotel, Atlanta.

ROADMASTERS AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elise La Chance, Room 901, 431 S. Dearborn St., Chicago 5. Annual meeting, September 15-17, 1953. Conrad Hilton Hotel, Chicago.

ST. LOUIS RAILROAD DIESEL CLUB.—F. C. Whitlock, Terminal Railroad Association of St. Louis, 376 Union Station, St. Louis 3. Regular meetings, second Tuesday of each month, Hotel York. Dinner, 6:45 p.m., meeting, 8.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7. Meets with A.A.R. Signal Section.

SOUTHEASTERN RAILWAY DIESEL CLUB.—H. W. Brewer, Seaboard Air Line, P. O. Box 6204, Jacksonville, Fla. Regular meetings, second Tuesday in February, April, June, August, October and December, 9:30 a.m., Mayflower Hotel, Jacksonville.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta.

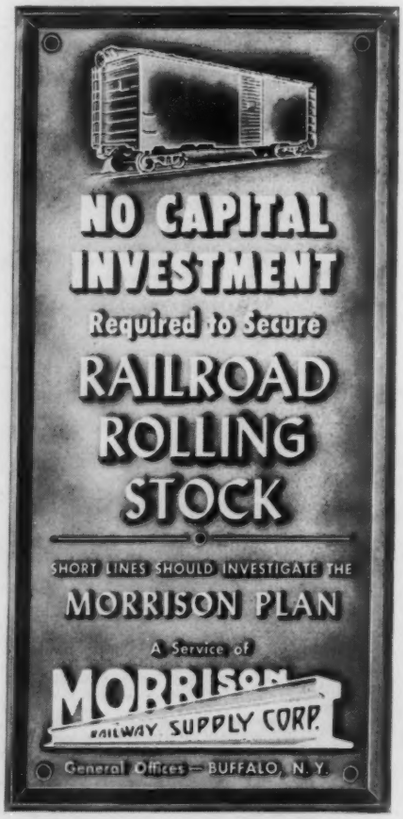
SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—F. I. Umhau, Southern Ry., Atlanta 3.

TORONTO RAILWAY CLUB.—J. A. North, P.O. Box 8, Terminal "A," Toronto 2, Ont. Regular meetings, fourth Monday of each month, except February, June, July, August and December, Royal York Hotel.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q and C Company, 59 E. Van Buren St., Chicago 5. Exhibit in conjunction with the meetings of the American Railway Bridge & Building Association and the Roadmasters & Maintenance of Way Association, September 14-17, 1953, The Coliseum, Chicago.

WESTERN ASSOCIATION OF RAILWAY TAX COMMISSIONERS.—M. L. Boydston, 516 W. Jackson Blvd., Chicago 6. Regular meetings, 12:15, p.m. first Wednesday of each month, except July and August, Traffic Club, Palmer House, Chicago.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago 1. Regular meetings: October 19; November 9; December 19, 1953. February 15; March 22; April 19; May 17, 1954.

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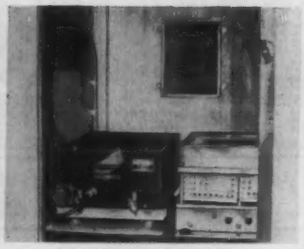

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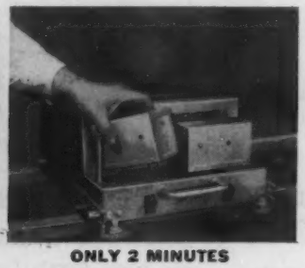

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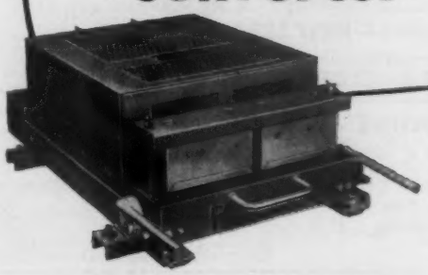

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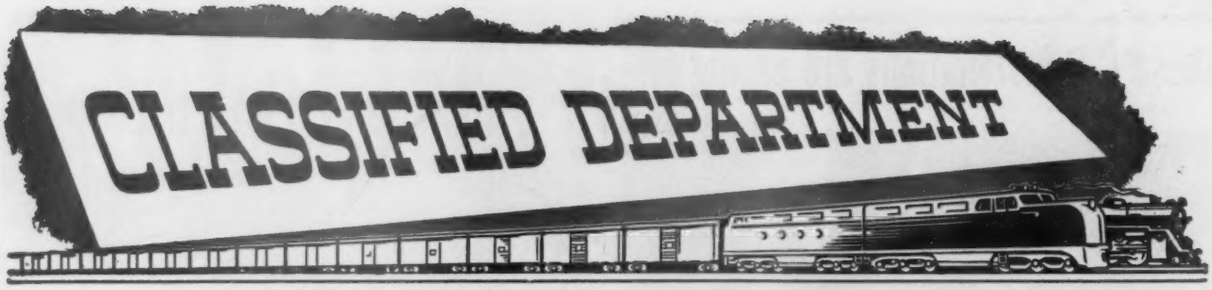


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